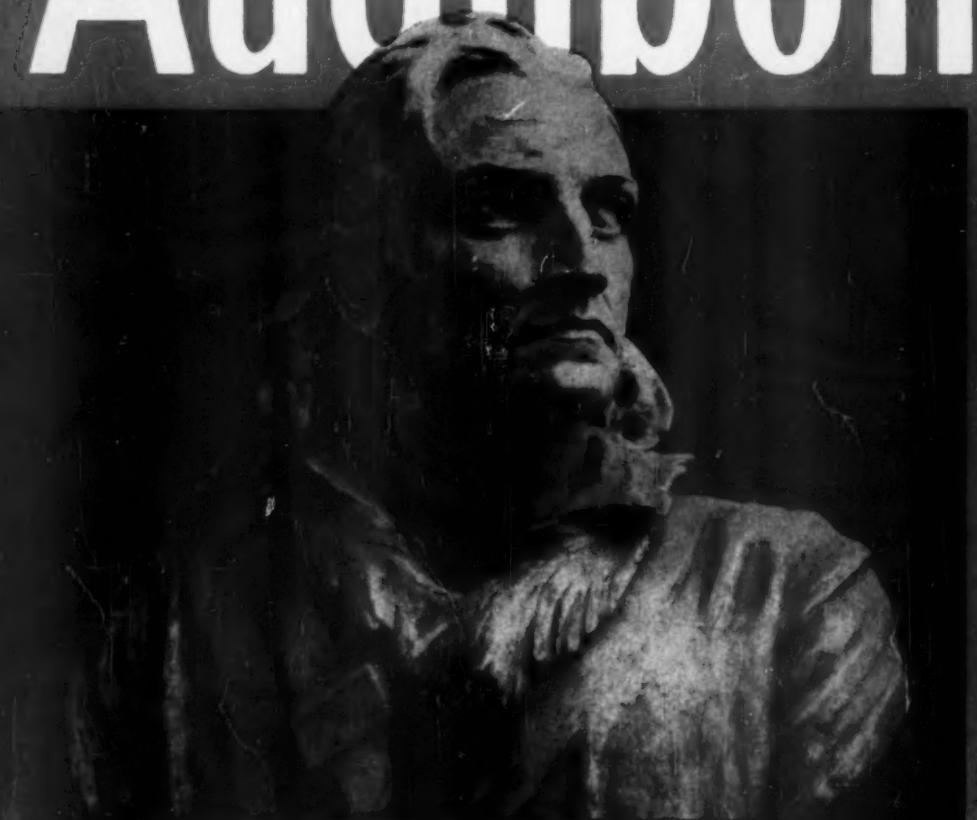


JOHN JAMES AUDUBON

CENTENNIAL (Page 6)

Audubon



"The productions of nature soon became my playmates. I felt that an intimacy with them not consisting of friendship, merely, but bordering on frenzy, must accompany my steps through life."—John James Audubon

magazine

IN TWO SECTIONS—SECTION ONE

JAN.-FEB. 1951

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Volume 53 Number 1
Formerly BIRD-LORE

*A bimonthly devoted to the protection and preservation of our native wildlife.
Fifty-second year of continuous publication.*

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COVER: Photograph of bust of Audubon and (left) Hall of Fame, courtesy of Hall of Fame, New York University. John James Audubon (1785-1851) was elected to the Hall of Fame in 1900, and a tablet dedicated to the American Woodsman unveiled in the Hall of Fame colonnade, University Heights, New York in 1901. Along with Asa Gray the botanist, Audubon was the first American scientist to receive this high honor. Twenty-six years later, on May 5, 1927, a bust of John James Audubon, sculptured by A. Stirling Calder, was unveiled at the Hall of Fame by Ernest F. Tyler, great grandson of Audubon. On that historic occasion, Dr. Frank M. Chapman, founder and first editor of *Bird-Lore*, now *Audubon Magazine*, gave the ceremonial address.

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INDEXED IN THE READER'S GUIDE TO PERIODICAL LITERATURE

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Letters

Call Note of Oregon Towhee

The border illustration to Alan Devoe's "What's In a Bird's Name?" (*Audubon Magazine*, July-August 1950) has the towhee uttering his call: "to-whee."

Webster places the accent after the "w" and pronounces the first syllable as in "town"; and though it is, of course, impossible to syllabize with fidelity a bird's note, Webster's version more closely resembles the rather harsh, plaintive cry of our local bird, the Oregon towhee.

This call is used throughout the year and seems to be the towhee's medium of regular communication. An attentive listener will detect its many inflections, as, for example, when the bird is alarmed. The advertising note is a vibrant whistle that is quite powerful for so small a bird. I am known to many of these birds as a source of peanuts, and am so used to having these whistles "blown" at me during nesting-time that I can detect one or two individuals by minute differences in their notes.

Possibly the whistle is used to assert territorial rights, but the Oregon towhee also has a song: a rapid "chick-chick-chick, see, see," with variations by different individuals. A vicious-sounding little "itz-u" denotes anger.

MORRIS JACKSON

Fanny Bay, British Columbia
Canada

A "One-man" Caspian Tern

In attracting birds, most of us consider the familiar land birds about our homes, not realiz-

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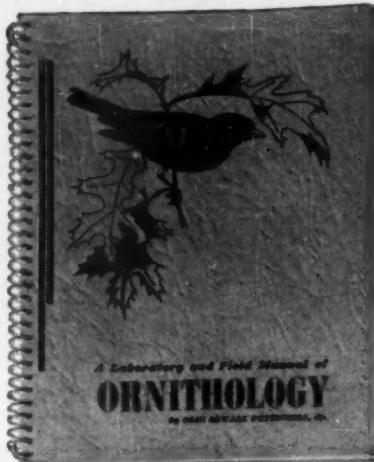
We are pleased to announce that with this issue (pp. 34-35), we begin a series of color reproductions of Audubon bird paintings, four of which will appear in each issue for 1951. Twenty-three of Audubon's paintings and Audubon's self-portrait were selected by the National Audubon Society to appear in the color section of *Audubon Magazine* and to be reproduced as Audubon Centennial Stamps.—The Editors.

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ing that certain sea birds become equally tame, even to becoming a mild nuisance when attracted by easy food.

Pelicans and gulls gather at fishing piers and boathouses, but these birds are not appreciated by the yachtsmen whose boats they foul. Terns, with their graceful flight and beauty are, in general, favorite birds of fishermen wherever these birds gather to glean the fisherman's discarded bait, and have even been known to try to steal a minnow from his line in mid-air.

Last winter a Caspian tern entered into what seemed to be a real friendship, if such is possible, with the keeper of the drawbridge on



the causeway over Sarasota Bay, Florida. The man spends much of his time, when boats are not passing through the drawbridge, fishing for mackerel, using for bait "glass" minnows, a favorite food of the terns.

One day a Caspian tern alighted on the rail a short distance from the keeper and eyed the minnows which the man kept in a pail on the rail beside him. Gradually, over a period of days the tern moved nearer and would catch in mid-air the minnows the man threw it. It finally became trusting enough to take minnows from the bridgekeeper's hands.

From then on the tern appeared every day when the keeper began to fish, sitting close to him. Even after the tern had eaten his fill, he would sit quietly near his human friend, and sometimes he seemed to sleep. To tease the tern, the keeper would cover the minnows with his hand. Frustrated, the bird would raise his head feathers in anger and peck at the bridgekeeper's hands.

The tern would not allow another of his kind to come near, and would fly off if strange people approached, clearly showing he considered that the bridge was his territory, and that the keeper only was his friend.

WILBUR F. SMITH
South Norwalk, Connecticut

PRONUNCIATION CORRECTED

I sympathize with your correspondent's wish (*Audubon Magazine*, p. 407, November-December 1950) to know the correct pronunciations of certain names of birds. I agree with most of the answers you give, but I should like to raise the question again as to some of them.

In the first place, I must call attention to the fact that it is quite impossible to indicate by mere spelling without diacritical marks the correct pronunciation of many words. Such is the case with *vireo* for instance. My Webster's International Dictionary (1939) gives this *i* as short *i* (that is, *i* as in *bit*). The *veer* that you give does not at all indicate the pronunciation we give the name here in New England, where the best speakers use standard English pronunciation of the vowels. We here and elsewhere in the East have but one sound for short *i*, and the same for *y* at the end of the word. Thus we have six short *i* sounds in the word *invisibility*, all alike, whereas in some parts of the West the word is pronounced *in-viz-uh-bil-uh-tee*, with three different vowel sounds.

Again, my Webster gives *oo'z'l* for *ouzel*, and I am sure my friends call it that rather than the *oo'zul* that you give. *Pileated*, according to any dictionary, can have either the long *i* or the short. I hear it both ways, though I prefer the short. Neither is wrong, I judge.

As to *towhee*, it seems to me only reasonable, as I said in *Bird-Lore* some years ago, to follow the bird itself and call it *to-whee*. This pronunciation, or at least one that indicates the same accent, goes back to an old Indian name for the bird adopted by Mark Catesby in the eighteenth century. It is too bad that *chewink*, which could not be mispronounced, was not adopted officially by the A. O. U.

Francis H. Allen

Cambridge, Mass.

Who Banded This Bird?

In September of 1950, a female black-throated blue warbler which had apparently been killed by striking a piazza screen was picked up at Smithtown, Long Island. It had been skilfully banded with two bits of thread or cord, which at first seemed like wire, one around each leg.

Does any of the many readers of *Audubon Magazine* know who marked this bird, perhaps on its northern nesting grounds? Such information would throw interesting light on the migration route it was following.

JOHN T. NICHOLS

American Museum of Natural History
New York, New York

Continued on Page 68

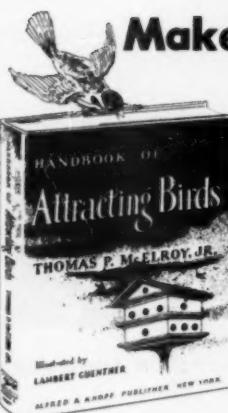
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*"Let us rededicate ourselves to the ideals and
purposes of the Audubon Society . . ."*

By John H. Baker
President, National Audubon Society

John James Audubon died January 27, 1851.

In observance of the centenary of his death, the National Audubon Society and other Audubon organizations throughout the continent have made extensive plans to do honor to the great naturalist and artist during 1951.

There is much in the life of Audubon that is inspiring to those of us associated with the organizations that bear his name. His greatest achievement was the successful completion of the monumental task to which he dedicated his life—painting 1065 birds of 489 species in 435 separate paintings.

Such a task was not easy in Audubon's time. There were no photographs nor mounted specimens to guide him. He traversed the wilds from Labrador to Louisiana and the Florida keys, and from Pennsylvania to Texas, enduring the hardships of primitive travel to paint his birds in their natural habitats.

Audubon lived in a pioneer era when America's natural resources seemed as limitless as the horizons to the west. Yet Audubon cried out against the wanton destruction of birds and mammals that he witnessed wherever he went, and warned, "The war of extermination cannot last many years more."

It is little wonder that, when in 1886 an organization was formed "for the protection of American birds not used for food," it should take the name Audubon Society. Today the National Audubon Society and its affiliated clubs across the continent constitute one of the greatest conservation organizations in the world.

UBON TENNIAL

At the beginning of this Centennial Year, the National Audubon Society is proud to announce the issuance of a commemorative set of 24 full-color reproductions of Audubon paintings in stamp form. We have taken great pains to publish an outstanding series of authentic reproductions of Audubon's birds, including a self-portrait of the artist. We believe that all members of the Society will want to obtain sets of these stamps as mementos of the centenary.

The Society knows that its members and friends will be pleased to hear of our good fortune in securing, through the generous cooperation of Mr. E. J. L. Hallstrom of Sydney, an exhibit of the original Audubon paintings which recently have been discovered in Australia. This exhibition will open at Audubon House at the beginning of Audubon Centennial Week (January 21-27) and will continue through the month of February. We hope that many of you will have an opportunity to see it. Also, we take special pleasure in calling your attention to the series of articles about Audubon's life and work which will appear in the 1951 issues of *Audubon Magazine*.

Let us all work toward the objective that everyone who has not heard of Audubon will become aware of him during this Centennial Year. Each of us can take advantage of the opportunity to learn more about the life and times of one of America's most remarkable pioneers. Let us also rededicate ourselves to the ideals and purposes of the Audubon Society so that we may become even more effective advocates of natural resource conservation—now, more than ever, recognized as fundamental to human welfare on this planet.



By Richard Stuart Phillips

IT may seem strange that in the heart of winter we should speak of spring, yet here in our northern Ohio country the signs are all about us. The first change varies from year to year. It may be in the quality of daylight, perhaps the wind shifts a degree or two closer to south and takes on a temporary balmy "feel"; a flight of ducks may arrow northward toward the open water of Lake Erie; a bird may sing. Things as simple as that, but the "naturist," in his animal fundamentality, a million years old, dimly senses them and rejoices.

In our Ohio marshes, the song sparrow is usually the first living creature to hint of the momentous changes about to unfold. On a gray and bitterly cold day, usually around the 12th of February, and on a day scarcely less gray or less cold than any of its predecessors, a song sparrow decides to sing. He is gleaning weed seeds in the shelter of a bank with a small flock

of tree sparrows—sprites from the north to whom any weather is fair weather. Since November the song sparrow has not sung his full song, and his most frequent note has been the faint chipping sound that he makes as he scuttles through the weeds in field mouse fashion. Suddenly he leaps upward and alights in a willow. Tipping back his head, his throat throbbing with half-forgotten notes, he sings the full song, "sweet-sweet-sweet, what have you got to give away!" The notes come forth rusty, a bit hoarse, improperly formed, but in a short time they have regained their springtime clarity and fullness.

The month is just half spent when high up against the gray sky, a turkey vulture comes drifting out of the south. It turns in tight little circles and swings about in vast arcs, head down-bent, eyes searching, but always it drifts northward. Odd it may seem, but this somber symbol of death is also the symbol of returning life, for

wherever death goes, there must be life to nourish it.

In the second half of February the pulse of the marsh quickens. Around the large boulder in the center of the big pond the ice disappears and a pair of American mergansers, following the windings of the creek in their peculiar high-backed flight, have found the marsh and the pothole. They are joined by an American golden-eye and three spritely pintails—two drakes and a duck. The merganser drake is strik-

ing in his black and white plumage, his mate is a drab little body, all gray and brown, but she does have one mark of distinction—her crest. The cold breeze, sweeping low over the pond, plucks the rust-colored feathers and draws them out behind, like a dull windblown flame.

One or two meadowlarks occasionally winter near our northern Ohio marshes living on weed seeds that they glean in sheltered spots and under the cornel hedge. Short and robust of body, the meadowlark does not hop as most birds do, but walks. He is a gleaner, a field hand—a plebian soul—and when February is well enough advanced for him to sing, one forgets his clumsy gait and his humble ways. Leaving the fields, he rises to the top of a tree, as near to the sky as he can reach, and whistles "Spr-ing is here!" The song is unutterably sweet, almost joyful, yet sad and lonely, as though the singer recognized the spring-stirrings of earth but yearns for the green fields and warm days that are yet so far away.

Even more stirring is the call of the returning killdeer. There may be shy, retiring souls among the birds, but the killdeer is not of them. One afternoon a flock of a dozen of them winging in from the south passes the marsh, out beyond the railroad track. They scream mightily, singly and in chorus. Swinging to the east they circle the big pond and come to a running stop near an exposed mud bank. They stretch their wings, lifting them above their heads, spread their orange tails, and sound their chirring notes. Not satisfied with the sparse fare of the ice-bordered pond, they leap into the air screaming "kill-dee! kill-dee! kill-dee!" In a clamorous cloud they whirl low over the pothole, long wings tilting erratically first one way and then the

FEBRUARY CHANGE

A self-styled

Ohio 'bog-trotter'

**marks the signs of
returning spring.**

Drawings by Robert Seibert

other, and startle the solitary golden-eye into explosive, dripping flight. The mergansers roll forward and disappear beneath the pond surface; the three pintails charge into the wind, then change their plans for flight and allow the breeze to shove them about. Like small boats that have cast off their mooring lines, they mill about, turning nervously first one way and then the other. As the alarm subsides, one of the drakes, seizing an opportunity, glides up beside his rival and deals him a fearsome blow on the head with his beak.

Occasionally winter, not to be so easily put off, returns during the night, bringing an inch-thick blanket of soft and fluffy snow, which clothes everything except the gray water of the pothole. In the morning one of the most beautiful sights in the world greets the bog-trotter—compensation enough for many bleak and fruitless days of tramping the slippery, treacherous dikes and the ice-bound ponds. Two male bluebirds, resplendent in their nuptial finery sit on a snow-covered hummock near the rail fence that borders the marsh on the north. A weak and early sun, peeping through a wind-rent cloud, touches them with shafts of golden light. Their backs

above the pure white snow are bluer than the sky of summer and the light strikes gules of warmth from their reddish breasts.

During the third week of February new bird voices add to the rising spring song of the marsh. A flock of 50 bronzed grackles swings across the pond from the south, traveling at treetop height, and as noisy as a bunch of schoolboys on an outing. The males fly with their tails spread fanlike. They alight on one of the dikes, and there is much wobbling about with their peculiar man-like gait, a great craning of necks and puffing of feathers, and a very bedlam of hoarse croaks and rusty screeches.

A flock of 200 male red-wings flies across the hayfield beyond the marsh, each bird rising and falling in undulating flight. From the flock falls the high-pitched flight notes of the birds. In a wild flurry of wings they settle into the dead rushes of the long pond. Clinging to the bending reeds they call "*con-quer-ee!*" with a fanning of tail feathers and bending of wings to expose their scarlet epaulets.

During the last few days of February the woodchuck begins to poke about outside the mouth of his den in the big dike. When he disappeared in late November for his winter sleep his body was so distended with fat that he



waddled as he walked. It seemed that one more ounce laid away on that rotund carcass would cause the hide to burst asunder, but now he is slab-sided, and like Cassius has a lean and hungry look. During the short time that he is



out in the open on balmy afternoons he feeds voraciously on what proven-
der is at hand, largely consisting of harsh weed stalks and dead rushes. His tracks in the thin and soiled snow reveal that he has been on one longer expedition. Down the dike to the west he has wandered, then up along the railroad bed, poking his black, inquisitive nose into every den opening along the way. He has been searching for a mate.

For many days the crows have been drifting northward. They come from the south and the southeast by twos and threes, by dozens, and by scores. During the morning the birds pass over fairly high, but in the afternoon they fly lower, straggling along at tree-top height. Many of them land in the fields surrounding the woods and by three o'clock there are hundreds of them blackening the ground—black knights of the road in their spring bivouac. A few of the birds come into the marsh and make a tour of the dikes, picking up what they can find in the way of insects, seeds, and crustaceans. In the morning this flock will move into the north, slowly, unorgan-

ized. By evening new thousands will have taken their places in the roost.

During the last two or three days of February the old, thin, and pock-marked ice retreats further from the margins of the pond. In the icy water, thousands of swamp tree frogs float with just their snouts out of water, or rest on tangles of submerged weeds, exposing their striped backs. A bog-trotter could walk past a million of these chorus frogs when they are silent, without seeing one of them. When singing, the tiny males seem to have their sides slightly distended with air and as they sing the air is forced forward through the throat and into the vocal sac that swells almost to the bursting point. The song of one tree frog is out of all proportion to its size, and a hundred of them singing throughout the night in a rollicking, pulsating chorus can be heard for half a mile. From a distance of a few feet the noise is almost deafening.

The tide of resurgent life that gathers volume during the daylight hours can no longer be quelled by the cold of the dark nights. A killdeer, possibly disturbed by some prowling predator, wings across the gloom above the marsh, calling distractedly. Screech owls make the long nights eerie with their tremulous love songs, and far back in the north end of Weyer's Woods where the big timber stands, a great-horned owl, standing guard over his mate on her nest, sends forth a deep and reverberating "hoo! hoo-hoo! hoo! hoo!"

Overhead, lost in the darkness, long wavering lines of Canada geese approach from the southwest and pass on toward the open waters of Lake Erie. Their wild honking cries have stirred the blood of a thousand generations of man, and will probably stir a thousand more.



Golden-Cheek OF THE CEDAR BRAKES

By Alexander Sprunt, Jr.

IT WAS very quiet. The Texan sun beat down warmly through the junipers. Now and then a wandering puff of breeze stirred the flat cedar foliage and set the leaves of nearby live oaks dancing briefly. White rocks gleamed here and there on the hillside, like lingering patches of snow, but this was June, not January.

Once, on the wings of the breeze, came the distant, raucous cry of a jay—not the familiar eastern call, but one of a different timbre and pitch. A titmouse complained querulously nearby. I sat motionless, watching the juniper branches, but no movement occurred among them between the intermittent breeze puffs. Finally, I tried the "squeak" and the sharp, kissing sound broke the stillness stridently.

A movement somewhat to one side and behind me caught the corner of my eye. I turned my head slowly. There across the rocky ruts of the old ranch road stood a gray fox, ears cocked forward, muzzle high, eyes alert. It met my surprised gaze for a moment, then turned and vanished like a sunray. However, the fox's coming to the squeak seemed to raise the curtain, for his coming was followed almost at once by another visitor.

← "A small bird was there—black-crowned and black-throated—with brilliant golden cheeks!"



Drawings by Robert Seibert.

A drooping juniper limb shook slightly, up went my binocular and—I had it in the field. A small, trim bird was there, black-backed, black-crowned and throated, white wing-bars, dark streaks along the whitish sides and . . . brilliant golden cheeks! There it was, amid its chosen haunts, just where it should have been, gleaming against the somber backdrop, the golden-cheeked warbler itself!

Among the various attractions, and demands, which beckoned us to the Audubon Camp of Texas in the summer of 1949, was the virtual certainty of seeing this beautiful and highly localized member of the warbler family. And so we did . . . through most of June and July of that year, followed by a similar season in 1950. Many a student from the Lone Star State and elsewhere made the acquaintance of this species which, as Roger Peterson says in his "Field Guide to Western Birds," is "found only in cedar-clad hills of central Texas." It is hardly necessary to add that the golden-cheek is a "desirable" on many a life list!

To understand something of such desirability, one must have some idea of its very restricted habitat, the environment, or ecological niche that the bird occupies, and outside of which it will not occur. Therefore, a brief look at the topography of that portion of the vastness which is Texas is necessary.

Running roughly from Austin on the north nearly to San Antonio on the south, and west to the high plains that border the Big Bend and Davis Mountains, thence up to the Staked Plains, is the Edwards Plateau. This great limestone uplift arose from the shallow sea which covered this area at the end of the Cretaceous Period. It was no sudden emergence, but a slow, gradual upthrust, with erosion tearing it down even as other forces reared it. It was the mountain building era, when the Rockies, the Andes, the Himalayas and other ranges were forced up above the surrounding levels, taking place about 120 million years ago.

As interesting, however, as that geologic development is, a much more recent change has to do with the golden-cheek! Hardly more than 75 years ago, a fraction of an eyewink geologically, the Edwards Plateau was a grass country. Hardly a tree grew upon it other than those along the watercourses. Looking at it today, this fact seems little short of incredible. But . . . so it was, up to a horse's belly, rank upon rank of rolling hills and valleys clothed in bluestem grass. Now and then very steep hillsides, particularly at the heads of streams, showed growths of juniper (cedar). In these isolated pockets of evergreen the warbler found a home.

Then came the cattle to this grassy paradise, far too many cattle, followed by too many sheep, then too many

goats! The grass disappeared; bare, rocky, desolate ground appeared. Seeds, windblown and bird-carried, dropped here and there, little seedlings came up, grew into saplings, then trees, and the live oak had appeared, together with its relatives, along with the constant spread of the cedars. Rolling hills, as well as steep ones became clothed with them, and with this effect of lost grass the entire aspect of the country changed. With the change came more warblers, for this type of habitat, overgrazed, semiarid, cedar-clad hills is where the golden-cheek lives, moves and has its being. Nowhere else in the United States does it occur; here it lives with

In the cedar, oak and elm country of the Edwards Plateau, the golden-



that other dweller in oak and juniper, the Texas jay, and often both birds can be seen in the same place at the same time.

Across the eastern rim of the Edwards Plateau lies the 100th meridian. Along it and overlapping it is the meeting place of east and west. Here indeed one might conclude that earth and sky are standing "at God's great judgment seat," for such is the place described by the immortal Kipling as the spot where in time "the twain shall meet." And so, beside the fact that "strong men stand face to face," so do birds of east and west; so do plants and animals. Here is the place, as the students of the Audubon Camp

checked warbler lives during its summer residence in the United States.



are told, where one must have Peterson's Eastern Guide in one pocket, and his Western Guide in the other! One is referred to as much as the other.

Here one meets the wood pewee and the vermillion flycatcher; painted and varied buntings; bob-white and road-runner. Here, the flicker's call drowns out that of the ladder-back; the shadow of a soaring black vulture falls across a lark sparrow in the grass; ruby-throated and black-chinned hummingbirds buzz about crepe myrtle and agave. Here indeed the West begins. To the Edwards Plateau we came, looking for *Dendroica chrysoparia*, that "golden-cheeked tree dweller," and there we found it as anyone can who looks for it.

Its pursuit and discovery leaves one with a sense of satisfaction only understood by those who watch for birds. Discomfort and long travel are forgotten when, amid the live oaks and the cedars, one sees the brilliant visitor from the tropics at home in its only haunts in the United States.

The bird was described by Sclater and Salvin in the Proceedings of the Zoological Society of London, in 1860, with the type locality as Vera Paz, Guatemala. On the Edwards Plateau it is a summer resident, arrival dates varying somewhat with the locality. Early March to mid-August would cover its range of stay in the United States. The great majority of the birds which nest in the Kerrville region (Audubon Camp of Texas) have departed by late July, and are well scattered and rather difficult to find from early July on. A lone female feeding in live oaks on July 21 was the last bird seen in the 1950 season. Both adults were feeding young which were just on the wing on June 20. Until early July this warbler may be seen

practically on the very edges of Kerrville any day, every day, with practically no effort.

It is an active species, constantly on the go, though the movements are rather more deliberate than nervous or jerky. At times a flycatcher technique is followed in feeding, but usually it searches closely amid the leaves and twigs of oaks and the foliage of the junipers. By the time I arrive in the Kerrville region (early June) most eggs have hatched, and I have therefore seen few of them. The nest of this warbler is well made, as many *Dendroica* types are, a compact cup of juniper bark stripings, plant down, fine grasses and weedstalks. The lining is either horsehair or feathers.

It is placed at rather low elevations, usually well under 20 feet, sometimes as low as five or six. The juniper (cedar) is often used, but observers familiar with the bird have reported it in live oak and cedar elm also. Eggs number three or four and are whitish, marked about the large end with spots, small blotches and splashes of reddish-brown, lilac and gray, frequently disposed in the form of a wreath. Being within the range of the cowbird, the golden-cheek is victimized by this parasitic species, in its case the dwarf cowbird, *Molothrus ater obscurus*.

The song of this warbler is difficult of description, and attempts to render it into words seem useless. What sounds like one thing to one person may sound utterly different to another. It is reminiscent to a degree of that of the black-throated green and Wayne's warblers (*Dendroica virens* and *D. v. waynei*). In one character at least, everyone must agree, and that is its ventriloquial quality. It seems to come from everywhere at once!

The golden-cheek strongly parallels

I love all trees, but I am in love with pines.—Aldo Leopold, "A Sand County Almanac."

two other rare American warblers in many ways, the Colima and Kirtland's, *Vermivora crissalis* and *Dendroica kirtlandi*, respectively. All three inhabit very restricted U. S. ranges; all three winter in the tropics; all three are easy to find in their particular environments. The golden-cheek and Kirtland's show marked preferences for specific vegetation, the former a juniper-oak association, the latter the jack pine. Colima is largely a ground, or near-ground nester. Of the three, the Colima is much the least known to American bird-watchers on account of its highly restricted range and the inaccessible character thereof, comparatively. Even Kirtland's, restricted as it is to three counties of the lower peninsula of Michigan (Crawford, Oscoda and Roscommon), has been seen by far more observers. Colima is completely confined to the upper levels of a single mountain range (Chisos) on the border of Mexico in the Big Bend region of Texas, an area of about 40 square miles. The golden-cheek, according to George Finlay Simmons', "Birds of the Austin Region," occurs in "a certain small section of the Edwards Plateau country of central Texas, from San Antonio and Austin west to Kerr, Tom Green and Concho Counties, rarely north to Bosque and McLennan Counties; nowhere else in the world." The breeding range of the golden-cheek was once thought to be no more than 10 square miles in Comal County!

So then in addition to numerous other attractions of the Audubon Camp in the famous Hill Country of the Guadalupe River section of the Edwards Plateau, the presence of one of America's rarest warblers is a magnet to draw many observers. Come and see it sometime!

ROCKEFELLER RECEIVES AUDUBON MEDAL



John D. Rockefeller, Jr., (center) receives the Audubon Medal and a citation for distinguished service to conservation from John H. Baker, President of the National Audubon Society. On hand to extend their congratulations to Mr. Rockefeller are R. Gordon Wasson and Guy Emerson, members of the Board of Directors, National Audubon Society.

(Editors' Note: *The following are the presentation comments of John H. Baker, President of the National Audubon Society, in making the award of the Audubon Medal to Mr. Rockefeller at his home.*)

The National Audubon Society has instituted a bronze medal, designed by Paul Manship, which is awarded from time to time to a man of eminence, who has rendered outstanding service to the cause of conservation. The chief reason we are gathered here today is to honor you, Mr. Rockefeller, a great American, philanthropist and conservationist. Over and above your outstanding accomplishments in the preservation and restoration of historic sites and works of art, including Fort Tryon Park and The Cloisters, and Williamsburg, so close to your heart, you have, through acquisition, maintenance and gifts of land and generous contributions of money, preserved unspoiled the beauties of many of the most spectacular regions in North America.

Ever mindful of the beneficial influence of natural beauties on the mind and spirit of man, you have saved for his recreational and appreciative use the cathedral-like grove of coast redwood giants in Bull Creek Flat in California and a magnificent stand of sugar pines in Yosemite National Park. You have given invaluable aid in establishing the intrinsic values of the Great Smoky Mountains

National Park in North Carolina and Tennessee, the Grand Teton National Park in Wyoming, the Acadia National Park in Maine, the Yellowstone National Park in Wyoming, the Crater Lake National Park in Oregon, the Mesa Verde National Park in Utah, the Shenandoah National Park in Virginia and the Palisades Interstate Park in New Jersey and New York.

Accepting with enthusiasm the unanimous nomination of a special committee, the Directors of the National Audubon Society take pleasure in awarding its medal to you for distinguished service to conservation. As President of the Society, it is my privilege to read the following citation:

John D. Rockefeller, Jr., one of the greatest philanthropists and conservationists of all time, earnest and conscientious benefactor of mankind, who, with purposeful devotion to great objectives, with sagacity and industry, has constantly and eagerly sought to use his wealth wisely in the public interest. Ever a lover of beauty, he has wanted to share it with others; ever hurt by the destruction of beauty, he has acted to preserve it. One of his chief monuments will ever be his contribution to the great system of national parks, with their natural glories, where man may view the pageantry of events of which he is an inseparable part, and where he may gain refreshment of spirit.

FROM THE GREEKS, EARLY ENGLISH
SPANIARDS AND INDIANS HAVE

American Animal

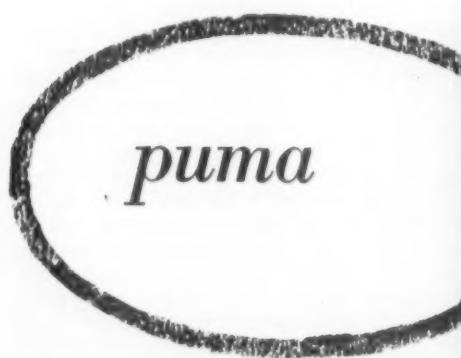
By Wilkins W. Wheatly

THE origin of language, like that of man himself, is unknown beyond that brief statement in the Book of Genesis which tells us that Adam at the direct suggestion of his Creator imposed the first names on every living creature. We can assume that the system set up by Adam was the one followed by later animal-namers, for as far back as we can trace their history we find in the simple names of animals an attempt to convey some idea about their characters, or to provide recognition marks that render them unmistakable. While some of the names, common and scientific, applied to our animals are whimsical or inappropriate, most of them are peculiarly suitable and help greatly in identification, especially when they suggest color, marking, or some other distinguishing feature.

There is a story behind almost every one of them, a story that is

not only interesting but informative. Country boys of ancient Greece, who wandered through the Vale of Tempe in search of rural delights, came upon a sleek, gray-haired little animal sitting erect and still for a moment with his tail curled up against his back like a plume, and called him *Sciurus*, or "he who shades himself with his tail." From the old Greek name has descended, through various languages our word, *squirrel*. And happily, unable to invent anything better, the scientists allowed the *squirrel* family to keep its Greek name, *Sciurus*.

The *squirrel* must have "sat" for his name-portrait in our own country too, because the American Indian boys who hunted him by the Great Lakes and the rushing streams of the New World called him *Adjidaumo*, or "Tail in air." Other Indian tribes gave the frisky little rodent a name which meant "he who can stick fast in a tree."



Photograph of puma by Paul J. Fair.

COLONISTS, ME MANY *Names*



Photograph of raccoon by Alan G. Gordon.

It would have been a good idea if the English colonists had stuck to Indian names for animals with which they were unfamiliar, even though some of them were tongue twisters. Those names which they did adopt have colored our outdoor language with such excellent and suggestive names as *skunk*, *opossum*, *raccoon*, *muskrat*, *moose* and *woodchuck*.

That little four-legged perfumer known to the Algonquins as *segunku* because "he makes water that stinks," should not complain at the slight deviation which makes him, in English, a *skunk*. The *opossum's* name was fairly easy to handle too. We had only to revamp the Northern Indians' *wabassim* or the Southern tribes' *apasum*, both of which signified "a white animal." We did fairly well by our "little brother of the bear," the *raccoon*. Indians said "he scratches with his hands" and so called him *arakun*. Sci-

entists tagged him with the specific name *lotar*, "the washer," because he insists on swishing his food about in water before eating it. *Muskrat* or *musquash* is a commendable attempt to pronounce the Algonquin *musquassus*, meaning "it is red," and the Indian *mus* or *moos*, "the one who strips or eats off," was so simple and so fit-

raccoon

ting that we let it stand as *moose*.

Our name for that famous big sleeper, the *woodchuck*, however, is a clear case of multiple mistaken identity. To begin with, the name is a perversion of *wejack* or *otchock*, both meaning "a fisher," that the Indians applied to the *pine marten*, which incidentally is not partial to pine woods, but does catch frogs and fish. Early settlers somehow got an idea that the Indian name belonged to another member of the marten family, the so-called *fisher* (which is not a fisherman) and then got completely confused by calling our biggest squirrel-like rodent a *woodchuck* because they mistook it for the wrongly-named *fisher*. But the scientists have fixed things up by giving him first a nice Latin name that made him literally "the mouse that looks like a bear"—certainly an unusual way to describe an animal of this size—and then switched his surname to the one he now uses, *Marmota*, which is just

porcupine



Photograph of porcupine by Allan D. Cruickshank.

plain "mountain mouse." But we really have honored him by making him the only animal having a special day on our calendar, "Ground Hog Day," February 2.

Instead of miscalling the *bison* a *buffalo*, we should have allowed Hernando Cortez to name our large wild ox. He might have done a lot better than the "gringos" and come up with something admirable. When he first saw the animal in the Aztec emperor's private zoo back in the 16th century, the Spanish conqueror of Mexico reported it as "a Mexican bull having a camel's hump and a lion's mane." *Coyote*, for our barking wolf, comes to us via American-Spanish from the Aztecs' *coyotl*, their name for a similar animal. South of the Rio Grande our largest and fiercest cat is called *El Tigre*, "the tiger," but having sneaked over the International Boundary into southern Texas, we call him by his regular Spanish name, *jaguar*, which in the language of northern Uruguay, is *jugua*, the common name for all tigers and the word the Spaniards tried to copy. We are also indebted to the Spanish for bringing us the South American Indian names *puma* and *cougar* for our big, native cat which we have loaded down with such other names as *panther* (Greek

for tiger), misrendered into *painter*, *catamount*, "cat-of-the-mountains," and *mountain lion*.

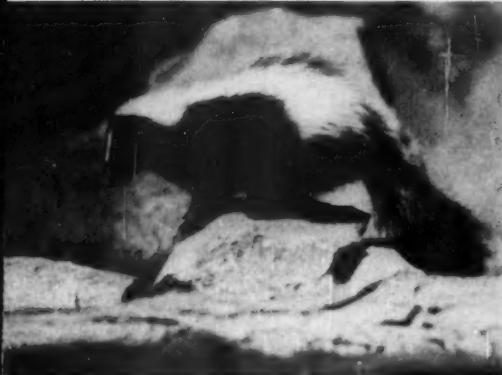
Sometimes when we become acquainted with an animal through another language, and borrow its foreign name, we fall into fine error. There is for instance the *alligator*. When that bulky reptile of the New World was first seen by the Spanish explorers, they were so impressed that they decided it must be the paternal ancestor of all the lizards so called it *El Legarto*, *THE lizard*. English sailors who brought it home, and had continually heard its name, but may have never seen it written, cemented together the Spanish masculine article "el" and the animal's name so that what we originally had was that saurian oddity *ellegarto*, now turned into *alligator*.

It was probably some homespun settler who gave the *big horn* or *Rocky Mountain sheep* the name that describes and locates it correctly. But the *Rocky Mountain goat* of North America did not fare quite so well. In spite of its name this bewhiskered mountaineer with the shaggy white coat of wool is not a goat at all, but rather a goat-like antelope (probably more antelope than goat) closely related to the alpine chamois and the Himalayan serow. Even though this elusive ani-

mal cannot be classified with the genus *Capra*, that essentially goat word "capricious" (which comes from the Italian *capra*, for goat) applies with full force, as anyone who has stalked him will agree.

That bundle of nervous energy and fleetest of all American quadrupeds, the *pronghorn antelope*, derives his name from a fabulous animal which the Greeks some 1500 years ago spoke of in hushed and fearful terms as *Antholops*. The beast was supposed to dwell along the banks of the Euphrates in ancient Babylon. It was very savage and fleet, and able to cut down trees with its sharp, saw-like horns. It seemed like a good name, and as no real animal was using it, early English naturalists applied it to the tiny Indian *blackbuck* which is only two feet eight inches high, but has long, spiral, twisted, 28-inch horns. So this Asiatic antelope really ranks as THE antelope. And because our *pronghorn* is quite different from all other living ruminants, it has been given a distinct and truly descriptive name, *Antilocapra americana*—*Antilo*, from *antelope*, and *capra*, from the frolicsome goat that is always subject to sudden change. So we have in the name an animal half *antelope* and half *goat*.

Photograph of skunk by Hugh Spence.



that is fleet, with sharp horns and given to going places suddenly.

Wolf is a shotgun type of name that wanders all over the world and is found with slight variation as a name applied to any dog-like animal in various languages. The ancient Babylonians had a singularly mild appellation for this passionate blood-letting predator which in English would read, "the beast that eats like a dog."

Beaver and *bear* simply refer to the brown color of the animals. Both the Anglo-Saxon *beofer*, and *bera*, were adjectives meaning brown. And when the word for the color finally merged into "brown," it is easy to see how the *bear's* nickname, *bruin*, was formed.

Badger in Early English was *bageard* from *badge* plus *ard* and referred to the distinctive white mark or "badge" on the animal's forehead. The name *lynx* in its Latin form means "bright eyes," and the term "lynx-eyed" was formerly used to denote one who was especially sharp-sighted. It's an excellent family name for our *wild cat* or *bobcat*.

Over the greater part of North America, wherever there is any remnant of the original forest left, we are apt to find that slow-going, thorny rodent with the low I.Q. familiarly known as "Porky" the *quill pig*. His French name, *porc-épic*, or "spiny

skunk

badger



Photograph of badger by Herman Hinrichs.

pig," we found easy to convert into *porcupine*.

Our native North American *reindeer* gets its French Canadian name, *caribou*, from the Indian *khalibu*, "the pawer or scratcher," in allusion to its method of digging out its favorite food, ground moss and lichens. When we call him a *reindeer*, we don't imply that he is a deer that is guided by reins. It's the Old Norse name of the animal, *hreinn*, with a supplementary but uncalled-for English *deer* added.

In the Pacific Northwest we have a peculiar little burrowing rodent that looks something like a woodchuck which we call the *mountain beaver*. It also goes by the name of *boomer*

or *whistler*. But it is not a beaver, and it doesn't live in the mountains, but inhabits the damp foothills of the Cascade Range. Neither does it "whistle" nor "boom." One of its names is *sewellel*, and this is a misnomer, too, for which Lewis and Clark are responsible. The Chinook Indian *shewallal* is a blanket made of two *sewellel* skins. First the explorers mispronounced the name for the blanket, and then with consistent inaccuracy misapplied it to the animal.

FINALLY we come to the word *man*, considered as a family of animals. Even if unwilling to be catalogued as one, *man* IS the most advanced of animals, although there are occasions

★ N A T U R E

Reprinted from THE NEW YORK TIMES, Monday,
July 31, 1950.

A Unique Opportunity

On a nine-mile strip of unspoiled Jersey coast between the Atlantic Ocean and Barnegat Bay, a mere sixty miles from New York City, lies the "last remaining significant stretch of natural ocean beach and dune land" in the northeastern United States. The description is not that of any sentimental nature-lover. It is a reasoned statement of the National Park Service of the Department of the Interior, which terms the area "unique" for its remarkable collection of coastal trees



Photograph of Island Beach by John K. Terres.



Photograph of moose by Hustace H. Poor.

moose

when we have good reason to doubt this. The name *man* can be traced back through dozens of languages with but little change in sound or meaning, by way of the Anglo-Saxon, *mann* to the Sanskrit, *menu*, "a thinker." Even our "scientific" name, *Homo sapiens*, has the same meaning, *homo*, being Latin for "man," and *sapiens*, "to have sense."

There are encouraging signs that man's name is not purely technical. It has taken a long, long time, but through sober reasoning *Homo sapiens americanus* has finally come to realize that he is part and parcel of nature. He is learning that what affects the smallest and simplest organism in

the complex inter-relationships which exist between soil, water, plants and wildlife, bears a direct relation to him. And he knows that abundant wildlife gives to our outdoors much of its seductive charm. Nature speaks to all animals. The birds and the beasts hear her voice and obey. *Man* feels the same impressions, but distinguished from the other animals by being a free agent he has often betrayed his relation to what is below him. It is fortunate that "man's place in nature" has become something more than a phrase, and that the "thinking animal," realizing that he can mend his destructive ways, is at last attempting to understand Nature.

I N T H E N E W S ★ ★

and shrubs. This strip of sand, which a committee headed by Richard H. Pough of the American Museum of Natural History is trying to save, is called Island Beach. Containing only 3,000 acres of dry land, and a maximum of 13,500 acres in all, the tract includes "bay-side and beach-side vegetation, dune vegetation, fresh and salt marsh areas, coastal plain forest, southern white cedar swamp and bog zones"; and it is also an important habitat for wildlife. It would make an extraordinarily valuable addition to our park system, within easy reach of the great population centers of New York, New Jersey and eastern Pennsylvania.

It is fantastic that this last bit of primitive coast, a sort of biological museum-piece, is in imminent danger of being lost forever. It is fantastic that its permanent recreational and educational values should be discarded in favor of an ocean-front real-estate development. Yet that is exactly what is going to happen unless over \$2,000,000 can be raised to purchase the area from its present owners, who are themselves apparently willing to give a very substantial contribution in order to make Island Beach a public property.

Private philanthropists are less and less able to make large-scale donations when an opportunity of this sort arises, and it is the

Continued on Page 50

Hawaii is trying to

re-establish the world's rarest wildfowl.

By NELL B. ELDER

SAVING from certain extinction the world's rarest wildfowl, the Hawaiian goose, *Branta sandwicensis*, is the object of a project now underway in the Territory of Hawaii. This attempt to protect and breed the rare bird, called nene (nay-nay) by the Hawaiians, is being carried out by the Territorial Board of Agriculture and Forestry and is engaging the attention of ornithologists and wildlife biologists on a world-wide scale.

Pohakuloa, on the slopes of Mauna Kea, island of Hawaii, is about half way around the world from Slimbridge, Gloucestershire, England, but scientific news travels far and fast, and so do scientists when something interesting comes up in their particular world. Thus it was that John J. Yealand, curator of the Severn Wildfowl Trust at Slimbridge, hearing of an impending blessed event in the Hawaiian nene population, managed to surmount the difficulties of travel out of England and came to Pohakuloa to observe and assist with the project, which has already produced two goslings, the first known in many years.

Mr. Charles W. Schwartz, wildlife biologist formerly connected with the Board of Agriculture, seems to have been the first to suggest a practical method of saving the nene from extinction. In his book, "The Game Birds of Hawaii," published in 1949, he pointed out that although the bird

CAN THE NENE COME BACK?

has been protected by law for more than 20 years, this protection was not sufficient to give much hope that it could increase in the wild, due to food scarcity, attacks by predators, and some illegal hunting. He proposed that the Board set up a controlled experiment with captive birds, under the best possible conditions, and carry on a careful study which might lead to the nene's restoration in considerable numbers.

The Pohakuloa project (the name means "big rock" in Hawaiian) was begun by the Board in August, 1949, with the loan of two pairs of adult nenes from Mr. Herbert Shipman of Hilō, who owns the last flock of any size. To these were added one from Kapiolani Zoo in Honolulu and one captured in the wild. This latter bird was caught by a hunter who was met and relieved of it by a game warden, who recognized it as a rare nene and brought it to the project.

Soon after the decision to begin the study had been made, Mr. J. Donald

Smith of the Board of Agriculture, Fish and Game Division, wrote to several wildlife authorities in various places, for information and suggestions that might be helpful. He found them much interested and anxious to be of assistance. Peter Scott, Esq.

M.B.E., D.S.C., director of the Severn Wildfowl Trust, offered to send Mr. Yealland to Hawaii, which offer was eagerly accepted. Captain Jean Delacour of the American Museum of Natural History, New York City, also expressed great interest in the project and gave much valuable advice.

Meanwhile things were going well at Pohakuloa. One of the Shipman pairs mated, and a normal clutch of four eggs was laid. One of these was accidentally broken, and found to be fertile, which was exciting news, since eggs laid by captive wild geese often are not. Mr. Yealland arrived in time to observe the hatching on February 5, 1950, of two healthy goslings, and spent about two months helping with their care and sketching them and their parents from time to time. When he left he took with him one pair of

The nene goose has been
protected by law for
more than 20 years.



All photographs courtesy of Territorial Board of Agriculture and Forestry.

adults to add to the Severn Trust, which needed only three species to complete its collection of all living wildfowl.

Anxious to find out why the third egg did not hatch, Mr. Smith sent it to the New York State College of Agriculture at Ithaca, N. Y. It was examined by Dr. Alexis Romanoff, outstanding oölogist, whose opinion was that the failure might have been caused by poor nutrition, and also that it was not surprising, since early death of the embryo is not uncommon in eggs laid in captivity.

At the time of this writing the nene babies, which in their own way are quite as important as the offspring of moving picture stars or royalty, are thriving, as they should with the devoted care they receive. It is hoped that other pairs may soon follow the example of their parents and add more infant nenes to the nursery. This may not be taken as a matter of course since the nene is extremely fastidious in its mating habits. Mated pairs show definite connubial affection, and go through a period of courtship before and during the laying of eggs, in which the male bows and dips elaborately as a sign of his devotion.

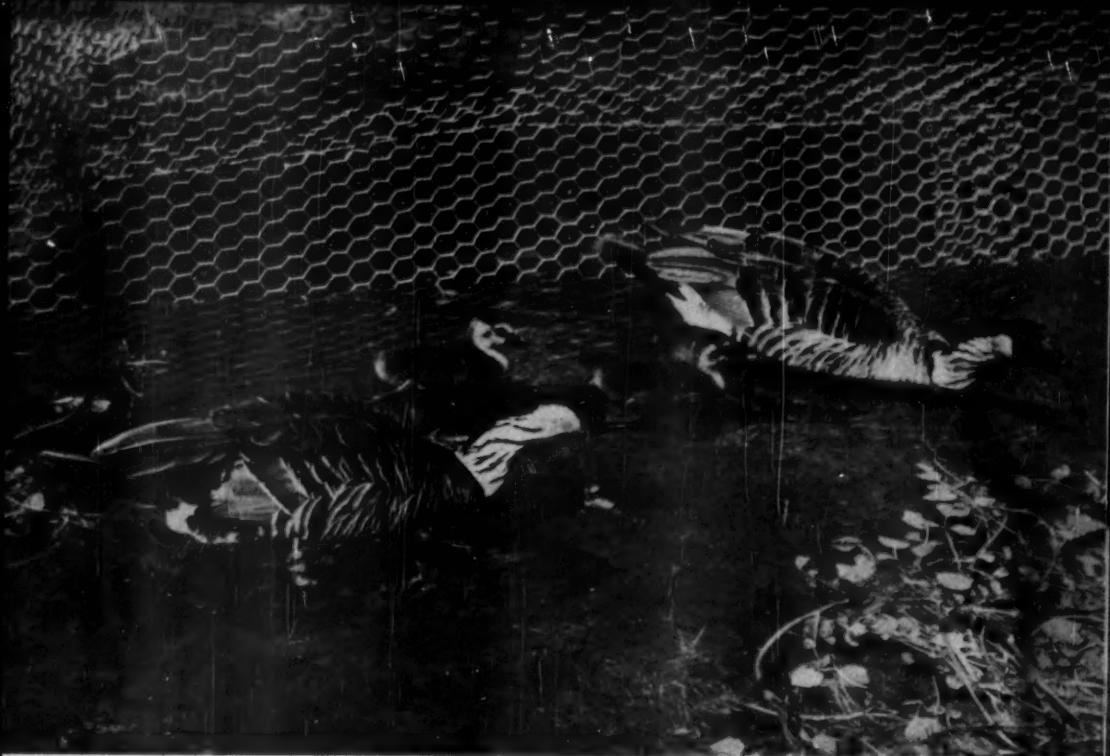
At this time the gander becomes extremely pugnacious, and will attack other males if not kept away from them. He is very attentive to his mate during the incubation and should anything happen to her he will take over the job. In fact, Mr. Shipman relates that one of his geese once left her nest for a night, only to be killed next morning by her angry mate, which then finished raising the family. The parents show great affection toward their offspring, too, and when strangers approach the family they assume a protective attitude, with ruffled plumage and extended necks.

Most of the birds now at the Po-hakuloa project came originally from the Shipman ranch, Puuwaawaa, on the slopes of Mt. Hualalai. Mr. Shipman, who probably knows more about the nene than anyone in Hawaii, says they develop attachments to particular people, as cats or dogs will. He tells of one goose which became so devoted to the elder Mrs. Shipman that when she drove from her home to Hilo, a distance of three or four miles, it would follow her, making the round trip on foot. The geese sometimes are extraordinarily fond of larger animals, too, like the one that chose a bull for its buddy, and followed its bovine friend wherever he went around the ranch.

The Territorial Board of Agriculture has a threefold aim in conducting this study: first, to determine if possible the reasons for the disappearance of the nene; second, to establish a Hawaiian goose sanctuary in the wild when enough suitable range has been brought under its control; and third, when enough birds have been produced to make it feasible, to distribute pairs to selected aviaries and zoos, where the work of bringing back this almost extinct species may be carried on.

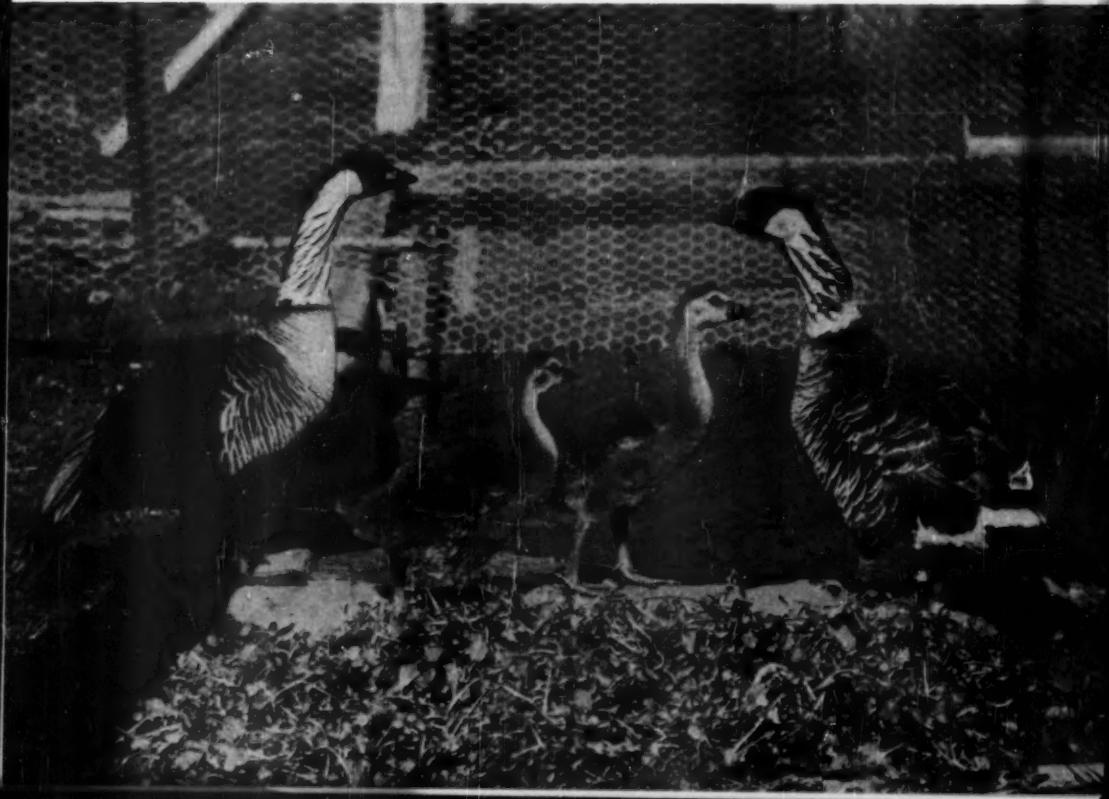
Such a project poses many problems: the nene, like all geese, matures very slowly, taking three years to attain breeding age. Breeding also is a slow process, since they lay from two to five eggs in a clutch, of which some usually fail to hatch, so that the increase in a flock would be much smaller than with quail or pheasants, which produce from 10 to 15 young per year. Therefore the species cannot withstand the high mortality rate to which wild flocks were subjected with such disastrous effect.

Another problem is to provide suffi-



The captive parent nenes swim protectively alongside the week-old goslings.

At three weeks of age the young nenes are beginning to resemble the adults.



cient feeding area. The nene feeds on the ground and needs a large area per bird. At Pohakuloa they are pastured on clover, which seems to take the place of the plants and berries which supplied the wild flocks in earlier times. This diet is being supplemented by feedings of whole wheat, corn, barley and a specially prepared mash, and the birds thrive on it. Since each bird needs approximately 2,500 square feet of space, the raising of any considerable number becomes expensive. Mr. Smith, who has charge, estimates that a successful breeding project will cost about \$185.00 per year per bird.

Like other birds which mature slowly, the nene has a very long life span. One case is on record of a bird which was alive and healthy at the age of 42 years. This patriarch was in Captain Delacour's wildfowl collection in Cleres, France, until the Germans took the country, the collection, and the elderly Hawaiian goose, which was the last of its species in Europe. As he remarks in a letter to Mr. Smith, Captain Delacour often wonders how his 42-year-old fowl tasted, if it ever reached the dinner table.

Paul Baldwin, wildlife biologist formerly at Hawaii National Park, and now with the University of California, has published the only intensive studies of the nene thus far. His bulletins, "The Hawaiian Goose, Its Distribution and Reduction in Numbers," *The Condor*, Jan.-Feb. 1945 and "Foods of the Hawaiian Goose," *ibid.* May-June 1947, record the story of the decline of this once abundant species, from an estimated 25,000 in the late 1700's to fewer than 50 birds at present.

Though now reduced to near-extinction, the nene was once plentifully distributed over the mountain slopes of the islands of Maui and Ha-

waii, and as late as 1891 were seen in fairly large numbers on the latter island. So far as is known, in the wild it seldom swam, but got the water it needed from the berries of the high, semi-arid slopes in summer and the soft plants of the lower lava flows where it went in winter to raise its young. For this reason it is believed that the webs of its feet which have shrunken are only about half the size of those of other geese. It enjoys swimming in captivity, though Baldwin says it will drown in the open tanks provided for watering cattle.

Credit for saving the nene from complete extermination, in the opinion of Mr. Smith, should go chiefly to a few ranchers like Mr. Shipman, who kept small domesticated flocks after the wild birds had disappeared. Asked to account for the vanishing nene, Mr. Smith says:

"The disappearance of the nene is mysterious because no one knows exactly why this waterfowl should have become so scarce. All that we definitely know is that it is extraordinarily reduced in numbers compared to 'estimates' of its former population we have from the *haole* (white) adventurers of the nineteenth century. We know that the nene is, among waterfowl, unique in its vulnerability to attacks by ground predators, particularly during the nesting and rearing seasons. In Hawaii there are not the marshes, lakes and streams so characteristic of the natural range of the other geese of the world. The nene, therefore, after its appearance in Hawaii eons ago, had to become accustomed to a terrestrial existence. It was unfortunate that adaptability did not take arboreal lines. Rather, the Hawaiian goose became adapted to living among the lava flows and learned to eat the many types of fruits and herbs

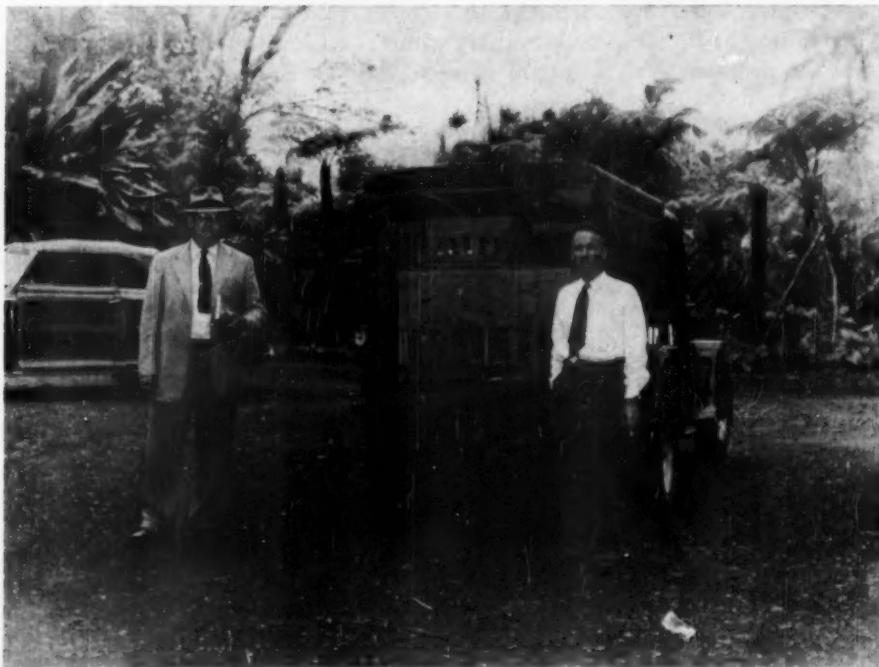
growing in the *kipukas* (open, fertile spaces) on the volcanic slopes of the various cones found on Hawaii and Maui.

"In this phase of adaptability, the nene retained its natural habit of nesting on the ground. Tragically this placed the nest, the geese and the resulting flightless young in an extremely dangerous position after the introduction of the wild pig by the Polynesians, the dog and cat by both the natives and the white men, the mongoose and many other foraging animals that inevitably followed the Caucasian invasion. The geese and the goslings in Hawaii do not have the opportunity of swimming away from predators as they can do in their northern nesting ranges. Here they must use their protective coloration and try to save themselves by hiding.

"There has, of course, been a great change in the vegetation of the Hawaiian Islands within the nineteenth and twentieth centuries; however, there still remains much area on the island of Hawaii relatively unchanged by man. An abundance of food of the type that the nene is supposed to relish still exists in many of the *kipukas* of Mauna Loa. Yet nenes have decreased just as sharply in these areas as along the coastlines. It does not seem possible that changes in the vegetation can be the most important cause of the reduction in numbers.

"My own opinion, and it is only that, concerning the causes of destruction is simply that the nene is extremely vulnerable to depredations during its nesting season. It is vulnerable to man, who has for centuries sought the goose for food. Although

Herbert C. Shipman (left), owner of the last sizable flock of nenes, stands beside John J. Yealand and two crated nenes, ready for shipment to England.



there has been a law forbidding the taking of nenes for many years, it has been relatively ineffective because of poor facilities for enforcement, the wide area of application, and ignorance on the part of the general public. The nene is vulnerable to predation by the wild pig, which even now literally plows up acres of the nene's former favorite nesting areas, and to attack by wild dogs which have no difficulty at all in wiping out entire families of geese during the breeding season. Of course, I could go on and list other predators, but the point is amply illustrated.

"The only way in which we can restore the nene to even a semblance of its former numbers is by obtaining a large tract of land within the historic nene range and by diligent patrol to control the destructive factors which I have named. We have such a tract in mind and hope to be able to restock this area of Mauna Loa Forest and Game Reserve with the geese we are raising at Pohakuloa. Whether or not the problem is so simple of so-

lution only time can answer; however, I am confident that with public understanding of the precarious status of the nene population and with sympathy toward our efforts to save it, we can actually restore a fairly large nucleus on the slopes of Mauna Loa within 20 years."

To those, and there are many in different parts of the world, who are interested in preserving rare wildfowl, this project, difficult and expensive as it is, seems very important. Naturalists believe that this handsome goose, with its black, brown and gray plumage and its distinctive spirally ruffled neck, is the most neglected of all game birds at present, and hope that the present work will lead to the production of enough specimens so that some may be distributed to interested people who will carry on the work. Thus the nene will not join the large number of native Hawaiian birds which are now only pictures in books and stories told where *kamaainas* (old-timers) gather to tell tales of the good old days in Hawaii.

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HOW AUDUBON LIVED

He was a genius of art . . . but Audubon had, too, a genius for the art of living. He lived with zest for the adventure, and with personal ardors. He savored everything, even the unsavory. He saw almost everything, from 1803 to 1849, from Florida to Labrador, from New York City to Fort Union on the borders of Montana. He lived among Pennsylvania Quakers; in Kentucky among

pioneers from Virginia; in New Orleans among Creoles; in Mississippi among planters; in North Dakota among Indians. He explored Maine and South Carolina, Texas and Florida. He knew all types; he was the friend of Daniel Boone and Daniel Webster.—Donald Culross Peattie, "Audubon's America," Houghton Mifflin Company, Boston, Massachusetts, 1940.

Great Men of Science

Biological nomenclature is the invention of Carolus Linnaeus. I have just looked him up in the encyclopedia, and find that he gets slightly less than a column of biography. It is curious to find that the author of one of the great achievements of the human mind gets so little attention. On looking further,

I find that Isaac Newton, surely one of the greatest of men, gets only half the space of David Lloyd George. It isn't specific neglect of Linnaeus; it is lack of general interest in the biographies and characters of the men responsible for modern science.—Marston Bates, "The Nature of Natural History."



Jean Jacques Audubon at work

Audubon - Pioneer American Bird Artist

By George Miksch Sutton

AS a collection, Audubon's bird paintings are a sort of world wonder. The birds they represent are themselves so beautiful and the artist has taken such pains to record them and their surroundings vividly that the thoughtful person can hardly be anything but awestruck on contemplating the pictures.

How well do I remember the day—only a few years back, really, yet somehow it seems a long while ago—when Dr. Frank M. Chapman suggested that a small group of us go from the American Museum of Natural History in New York City across the street to the New York Historical Society to look

at the Audubon originals. As long as I live I shall be grateful to Dr. Chapman for engineering that little expedition. I had not known where the originals were, and even if I had known I might have assumed that no one would be allowed to examine them. But the great sheaves of drawings were brought out for us, and we looked at them one by one.

There were five of us: F. L. Jaques, the renowned bird artist, Robert Cushman Murphy, John T. Zimmer, and Dr. Chapman of the bird department, American Museum of Natural History, and I. I cannot speak for the other four men, of course, but as I looked upon those drawings, bearing

in mind that the hand of Audubon himself had made them, I experienced a thrill I had never felt before. I was amazed at the brilliance of the colors and cleanness of the paper. Somehow I had come to think of the Audubon originals as a lot of old and faded works. But so well preserved were they that they looked as though they might have been painted the day before. I remember in particular (Plate 66) the ivory-billed woodpecker drawing. As I noted certain details—especially the silvery-gray lichens and falling bark—I was carried back to the spring of 1935 when I had myself seen and heard living ivory-bills down along the Tensas River in Louisiana. The magnificent birds had flown to a tree above my crude blind of maple branches and had stayed there long enough for me to sketch them in pencil direct from life. Occasionally the male had rapped the tree with his great bill and bits of bark had fallen, striking the water only a few feet from me. As I stood in the Historical Society in the presence of Audubon's original water-color—with four distinguished contemporaries at my side and memories of living ivory-bills crowding my brain—time and space seemed to vanish. If any single feeling dominated me at that high moment I think it might have been a simple love of America, my native land: profligate, careless America, so terrifically and helplessly eager to turn timber into gold; so pitifully forgetful of such wealth as ivory-bills.

Audubon's painting of the ivory-bills is before us. What of its maker does the picture reveal? Is the frontiersman with his cap of coonskin there? Is the salesman and promoter there? Indubitably the ornithologist, the devoted lover of birds, is there. The artist is there. But am I not right in saying that first of all the worshiper

of life is there? How can anyone study a work of this sort without feeling that its creator was more interested in life, in the all-important quality of being alive, than in anything else? Note the intensity in the face and lifted crest of the ivory-bill that has just uncovered the beetle. Note the utterly untraditional body position of this same bird—tail out in midair, one wing half-spread. Note the sound of powerful claws clutching at the dead branch, of the heavy bill tearing away bark. Did I say sound? I must have meant just about that. So vivid and real is the picture that we can almost hear the birds.

So away with all the verbiage of the art critics, to whom "balance," "dynamic symmetry," "three dimensional quality," "objectivity," and so on seem to mean so much! Audubon was after none of these primarily. If he could make his bird look alive, if he could give it the appearance of a sentient, breathing creature, he was satisfied. I believe it can truthfully be said that not a single one of his paintings resulted from a conscious effort to create an "effective" composition. The procedure was spontaneous and instinctive. He felt a great urge to draw a certain bird because its beauty and vitality appealed to him. He drew the bird in flight or perched it on a plant or rock trying to show it to advantage. Often the accessory material was strikingly beautiful both in color and design, and Audubon's selection of this revealed the artist as well as the naturalist in him. Sometimes he was obliged to draw the bird in a pulled-in attitude so as to get it all on the paper. Often he drew it in an unconventional, even a downright preposterous attitude. But his approach was never dull. A certain dramatic quality—a quality of suspense or plot—was al-

most always there. It is this quality which demands our second look, our third look, our frequent return.

One of Audubon's most fascinating pictures (Plate 76) is that of the hawk lunging into the midst of a covey of quail. Usually I turn to this picture for the sheer joy of looking, but sometimes I let it give me a timely little lecture on the folly of putting too many irons into the fire at once. Lovers of bob-whites may feel sorry for the "poor little quail" and yearn for a gun with which to kill all hawks, but my sympathies are with that ogre of outstretched talons and glaring eyes, who for all his ferocity and determination will surely go hungry unless he settles upon some definite plan of action. Already, I fear, he has missed his chance. In trying to catch three or four quail he has lost them all. See what I mean by "suspense," or "plot"?

Now is it this picture's *ornithology* which takes us back to it time after time? Assuredly not. Is it the draftsmanship, the composition, the richness of color, the *art*, so to speak? To some extent possibly. The true lure is neither of these; the true lure is drama. Will the quail all get away or won't they? Which quail is—or are—most likely to be caught? A great many Audubon pictures have this quality. There is drama in the chasing of a moth by a whip-poor-will; in the writhing of a snake in a swallow-tailed kite's falcons; in a warbler's peering beneath a leaf; in a flycatcher's parted bill. Does this dramatic quality reveal the artist in Audubon? If it does not, then it would seem that I have wandered far from my subject. To my way of thinking it is impossible to consider Audubon's art as apart from his

drama. Who is to tell us exactly what art is? Would we have Audubon's art at all had the dramatic element in birdlife not appealed to him?

It was Audubon's instinctive urge to dramatize which led him to represent so many of his birds in violent action. As several admirers of the great artist have pointed out, he was so surfeited with the conventional and lifeless poses used by the bird artists before him that he swung away from the traditional in a sort of furious huff. I do not think that he deliberately intended his white gyrfalcon (Plate 366), with wings partly folded and head straight down, to suggest that in another instant it might dash itself to pieces on the rock. I do not think he deliberately drew his flying golden plover (Plate 300) at the level of the standing birds yet with its back toward us just to make us hold our breath. I think this defiance of nature was a by-product of his determination to avoid the trite, plus a dash of sheer exuberance. Completely fascinated by the patterns of the back plumage in both birds, and determined to show this beauty off whatever the cost, he worked out the exquisite details forgetful of the general effect the pictures might produce. This was Audubon, lover of beauty, lover of the dramatic, avowed opponent of the prosy.

I have used the word *preposterous* in describing some of the attitudes in which Audubon placed his birds. A good example of this sort of attitude is that of the squatting marbled godwit. Here the wing seems to have been lifted so as to permit the bird to preen its wrist feathers without lowering its head. I have observed marbled godwits hundreds of times on the Saskatch-

NOTE: The following two pages of color reproductions of Audubon bird paintings are four of those discussed in Dr. Sutton's article.

The Audubon Centennial Stamps

From paintings by John James Audubon



IVORY-BILLED WOODPECKER

NATIONAL AUDUBON SOCIETY

"Its notes are clear, loud, and yet rather plaintive . . . usually repeated three times in succession. These are heard so frequently as to induce me to say that . . . this . . . leads to its destruction . . . not because it is a destroyer of trees, but more because it is a beautiful bird and its rich scalp attached to the upper mandible forms an ornament for the war-dress of most of our Indians . . ." John James Audubon, p. 343, Vol. I, Ornithological Biography, 1831, Edinburgh.

"Our Parakeets are very rapidly diminishing in number; and in some districts, where twenty-five years ago they were plentiful, scarcely any are now to be seen. At that period, they could be procured as far up the tributary waters of the Ohio as the Great Kenhawa, the Scioto, the heads of the Miami, the mouth of the Manimee at its junction with Lake Erie, on the Illinois River, and sometimes as far north-east as Lake Ontario, and along the eastern districts as far as the boundary line between Virginia and Maryland." John James Audubon, p. 138, Vol. I, Ornithological Biography, 1831, Edinburgh. (The Carolina paroquet is, apparently, extinct. Dr. Frank M. Chapman saw the last known living bird northeast of Lake Okeechobee, Florida, in 1904.—THE EDITORS)



CAROLINA PAROQUET

NATIONAL AUDUBON SOCIETY



SWALLOW-TAILED KITE

NATIONAL AUDUBON SOCIETY

"They always feed on the wing . . . They sweep close over the fields, sometimes seeming to alight for a moment to secure a snake, and holding it fast by the neck, carry it off, and devour it in the air. When they are searching for grasshoppers and caterpillars, it is not

difficult to approach them under cover of a fence or tree. When one is then killed and falls to the ground, the whole flock comes over the dead bird, as if intent upon carrying it off." John James Audubon, p. 369, Vol. I, Ornithological Biography, 1831, Edinburgh, Scotland.



YELLOW-BILLED TROPIC-BIRD

NATIONAL AUDUBON SOCIETY

"The specimens from which the figures in the plate were taken, were obtained on the Tortugas, in the summer of 1832, by my kind friend Robert Day, Esq., of the United States Revenue Cutter, the Marion. They were shot out of a flock of eight or ten, and were in fine condition. I have represented the male and female, in what I suppose to be their full summer or breeding plumage; but not having had an opportunity of studying the habits of this remarkable bird, I am unable to give any information respecting them." John James Audubon, p. 442, Vol. III, Ornithological Biography, 1835, Edinburgh, Scotland.

ewan prairies and never saw one in any such grotesque attitude as this. Shorebirds can, I know, get themselves into odd, even comical, postures. "Peeps" have an amusing way of lifting their wings, archangel style, straight up over their backs. All birds, especially shorebirds, occasionally stretch a leg and wing on the same side far back simultaneously. Audubon's adult black-bellied plover is stretching in just this way. Frequently I have seen a shorebird bring its foot up over and back of its wing when scratching its ear coverts or lores. Audubon seems never to have drawn a bird in this intriguing position.

Audubon erred badly in showing the fulmar, the greater shearwater, and the yellow-billed tropic-bird standing on their toes with wings folded. All these species are plantigrade. They can shuffle along awkwardly, or patter forward on their toes with the help of their flapping wings, but when they cease to move forward and fold their wings they plump down to their bellies and rest on their whole feet (i.e., the tarsi and the toes).

Now is this adverse criticism of Audubon's *art*? I submit that it is. As pure design any sort of bird—dead, alive, plucked, stuffed, what not—may serve artistic ends; but if the artist's avowed purpose is to draw a living bird in its environment, then that bird must have a functional attitude of body if the picture is to be wholly acceptable as art.

Despite my glowing praise of, and great enthusiasm for, Audubon's work as a whole, I find very few of his paintings entirely acceptable individually. His famous wild turkey gobbler (Plate 1), for all its great beauty of detail, is almost a travesty: no wild turkey ever stood in that stiff, strained position. The barred owl and grinning squir-

rel are unintentional caricature. The upper saw-whet owl in his painting of two of these birds (Plate 199) is a sort of pressed flower of a bird, a lot of soft, flat feathers without body. The two red-tailed hawks fighting in mid-air over a rabbit (Plate 51) are hopelessly wired into position, static, motionless. The golden eagle (Plate 181), though beautifully drawn, hangs in space—but how it manages to defy gravity so successfully no one knows.

To me the most completely satisfying of Audubon's bird paintings is his "Carolina Parakeets." Here seven birds (Plate 26), all in approximately the same plane, are perching in or climbing about the stems of some big cocklebur plants. At least three birds are feeding, but one has paused to scratch its ear, one is nibbling a toe, one is sidling over to another position, and one is at the point of fluttering forward to an untouched cluster of seeds. The detail and great activity of the immediate foreground so engross our attention that we have little time to notice the complete absence of background. The color is rich, appealing instantly to the senses. The composition is altogether pleasing. Oddly enough, the several birds do not seem to crowd each other or the paper, and they are so arranged as to give us the feeling that they will not up and fly off until all the burs are eaten. In no part of the picture is there evidence of the artist's forcing a bird to take this or that position, or a stem to take this or that twist, merely to make the drawing easier or keep it all within certain boundaries. Parts of the birds are hidden, but nowhere are those vital centers of interest, the faces, obscured. The general effect is that of a beautifully designed tapestry in rich greens, yellows, orange-reds, blues, browns and white.

Possibly the most remarkable thing about this highly artistic picture is its realism. Nowhere has scientific accuracy been sacrificed or even toned down a little to serve artistic ends. The birds are shown eating burs—not because cocklebur plants were interesting in shape or because the brown tones of the dead stems "went well" with the green of the birds, but because Audubon knew from repeated observation that Carolina parakeets were fond of the kernels under those spiny husks. The cocklebur plants themselves he drew with proper attention to botanical detail, yet note how pleasingly they disperse themselves. The birds he delineated all but flawlessly. I cannot help feeling that he had one or more living models, for this picture has a complete authenticity of body posture and facial expression that most of his drawings do not possess.

It can be argued that I know nothing about the Carolina parakeet since I have never seen one alive. Close familiarity with two Mexican parakeets—the green (*Aratinga holochlora*) and the Aztec (*Aratinga astec*)—gives me some right, however, to my conviction that Audubon's drawing is extraordinarily good. The green parakeet goes about in close-knit flocks, just as the Carolina parakeet is reported to have done. Shrieking and chattering as it alights in a fruit or blossom-laden tree, it feeds hurriedly. The foliage rustles as the birds climb about, and the falling of the husks, pits, and broken twigs reminds one of rain.

Certain details of Audubon's "Carolina Parakeets" reveal his powers as an observer. Note the opened mandibles in the uppermost three birds. His drawing of these clearly shows that he had seen the *upper* mandibles, as well as the lower, moving during the process

of reaching for, pulling off, and husking seeds. His drawing of the zygodactyl, grasping feet is excellent; no foot of the nine in sight is anything but mobile, strong and alive. In each of the seven birds the feather arrangement is not only pleasing but correct. Especially good are the spread wings and tails with their semi-geometric patterns. To me one of the most exciting features of the picture is the head of the bird at the lower right. Here we have an almost full-face portrait. From long experience I know that this angle is a difficult one to draw.

For Audubon's "Carolina Parakeets," I have nothing but the highest praise. So impressed am I by its complete authenticity that in viewing it I feel that I am almost watching the birds themselves. The picture is a priceless possession of our age. Its existence imparts to a species now extinct a certain illusory permanence and indestructibility. How unfortunate that the picture's power is so limited! Through many a painting we can be led to see, and thus to enjoy more fully, the beautiful, the exciting, the soul-stirring in that which exists about us. Through this one, however, we can see only a reflection of that which existed long ago.

Quite frankly, I doubt that Audubon intended his paintings to plead any such cause as that which we now call conservation. He loved being outdoors, loved watching and hunting and painting birds. He was a great man, a great artist, at heart a great conservationist. If we, his admirers, read in his work a powerful plea for greater sympathy and understanding, who am I to deny that he himself put it there? In any event, whatever the source of our desire to protect wildlife, let us never stifle that desire.

THE *Bushy-Tailed*

By Norman C. Negus

THE cabin was very quiet at first, so silent that the heavy breathing of one of my companions was quite audible. Suddenly I was aware of a steady tapping coming from somewhere over my head. I listened, wondering what might be its source, then abruptly it ceased, and some animal thumped over the loose boards that lay across the rafters. The noise was so loud that I thought of a bear or a nest of porcupines. The initial running and thumping seemed to start a chain reaction. From every corner of the cabin came a variety of sounds—loud scuffling and scratching, gnawing and thumping, and the occasional thud of some object moving suddenly.

By this time my friends were wide

awake. At the moment I found my flashlight, something clattered among our silverware and mess kits on the table. I flashed on my light and for a few seconds I saw nothing, but as I shifted the beam across the table, it played on a furry form about the size of a squirrel. The animal sat there as if transfixed, his large eyes staring, his long whiskers twitching nervously. I knew then that our mysterious visitor was one of the famed pack rats of the West.

This clean, bright-eyed creature bore little resemblance to the house rat which so many people think of when they hear the term "rat" used. In fact, no American animal has been more maligned by this comparison than the pack, or wood, rat, for no

"The animal sat there as if transfixed, his large eyes staring, his long whiskers twitching . . ." Photograph by the author.



PACK RAT—

Furry Trader

The only North American mammal

**that brings home useless objects,
the pack rat is our original "art
and curio collector."**

"Wherever man's habitations penetrate the mountainous regions of the West, pack rats are found."

U. S. Forest Service photograph.



Drawing by George Dineen.

two animals could be so different and still look so much alike. The pack rat is somewhat larger, the fur on his back is a beautiful reddish brown, blending to pinkish buff on the sides, and snow white on the belly. His long bushy tail, which he flicked derisively, gives him a squirrel-like appearance. After a minute or two he thumped loudly on the table with a hind leg, sprang to the floor, and was gone.

Wherever man's habitations penetrate the mountainous regions of the West, pack rats are found. Often in the ghost towns of the Rockies they remain as residents long after the surrounding hills have been gleaned of their mineral wealth, and the towns abandoned. Even the dank, dark, deserted mineshafts are considered suitable homesites by the bushy-tailed pack rat, so-called because of its habit of packing home an incredible number of useless objects.

The most casual observer cannot help but notice signs of pack rats. Often their presence is betrayed by large disorderly piles of sticks and leaves, and every sort of miscellaneous object they can move. These large



"Large owls are probably the pack rat's most formidable enemies." Photograph of great horned owl by Hugh M. Halliday.

debris piles form a protective maze over either the entrance to their nests in rock crevices and cracks, or may simply cover the nest itself. From this odd habit of collecting materials pack rats have gained the reputation as traders, and as robbers of camps and cabins. Despite their collecting habits, they are remarkably clean and sanitary. Their nests are neat structures, usually cup-shaped, with thick walls made of shredded cotton or other cloth material that is available. Old mattresses are a favorite for this purpose, and are one of the first things pack rats will pilfer when they invade cabins.

Most objects will appeal to a pack rat's collecting fancy. A great variety of articles have been found in their debris piles including coins, watches, rings, cartridges, knives and spoons. Walter P. Taylor compiled a huge list of articles from a single pack rat nest in Washington, which included several bars of soap, 10 chocolate bars,

and 15 lumps of sugar. It is not without good reason that the experienced mountaineer turns to neighboring pack rat nests when searching for lost articles around camp.

Oldtimers staunchly claim that when a pack rat steals an article, he invariably leaves something else in its place. As a result they are often called by the common name of "trade rat" rather than "pack rat" or "wood rat." Such purposeful trading is undoubtedly not the case. It is more likely that a pack rat finds an object more attractive than the one he is carrying, and drops what he has in order to abscond with the more alluring loot.

Legends galore have resulted from their supposed trading habits, some of which are based on facts. Tales of gold nuggets and valuable watches carried off are common stories among mountain men. One old fellow is reported to have removed his false teeth for the night and placed them on a table in his cabin. He awoke in the

morning to find they had been stolen, and in their place was left, ironically enough, a toothpick!

Pack rats have been known to make hundreds of return trips to remove quantities of materials which particularly appeal to them. A large male which I kept in the laboratory escaped one day from his cage, and despite thorough searching I failed to discover his hiding place. After a few days, however, I noticed that a large box in which I kept rat food pellets was being emptied rapidly of its contents. Within two or three days not a pellet remained. Suspecting my pack rat of the deed, I replenished the food supply in the box and set a livetrap nearby baited with some of the pellets. Eventually I caught the

rascal, but not before I realized what a great many return trips he had made. Originally the box contained several hundred pellets. When I discovered that he had carried only one pellet at a time, I had some idea of the hundreds of trips he must have made back and forth between the food box and his hidden cache somewhere beneath the floorboards of the building.

Since pack rats do not hibernate, their collecting habits stand them in good stead. In addition to the collection of odd articles, they store large piles of leaves and other food materials around their nests as a reserve supply during the winter.

Pack rats are primarily vegetarians, but are not adverse to eating all kinds of meat. One need scarcely worry

"When cornered, a pack rat rears up on his hind legs and uses his forelegs like a boxer." Photograph by the author.



about what type of bait to use in trapping them, for anything that is edible would probably be successful. Dr. Walter Dalquest has described a captive pack rat at the University of Washington in Seattle which escaped and ate a number of lizards. Arthur F. Halloran reported a pack rat trapped while carrying a young cottontail rabbit in its mouth. Such data indicates that pack rats may be quite omnivorous animals when the opportunity presents itself.

Commonly, aspen leaves are stored by the bushy-tailed species in the mountains; sagebrush and cacti are collected by the desert inhabiting species. There are several records of mushroom caches found around pack rat nests, but whether they are used as a food supply is questionable.

Though occasionally pack rats come out during the day to feed or collect nest material, they usually venture forth at night after most human activities have ceased. They are highly nervous, and are easily frightened by sudden movements and noises, scurrying to their nests at the slightest provocation. Their perpetual curiosity soon overcomes their fear, and they resume their activities.

When cornered, a pack rat assumes his favorite defensive position. Rearing up on his hind legs he backs warily against a wall or boulder and uses his forelegs like a boxer to ward off his enemy. Often with amazing swiftness he strikes out at his tormentor with his short forelegs, and if the opportunity presents itself he sinks his powerful incisors into some vulner-

"Around old buildings, red squirrels often have nests without apparent conflict with pack rats." Photograph by Karl H. Maslowski.



able spot. Sometimes he turns half on his side with only one foreleg raised in defense.

An adult pack rat seldom emits any vocal sound during his busy lifetime. Occasionally when attacked or when fighting with others he will squeal in a high-pitched note, but more often the characteristic rabbit-like thumping with a hind foot is a sure indication that a pack rat is excited or alarmed. It is the source of much noise in old cabins where loose boards reverberate to the drumming of furry feet.

Perhaps the greatest enemies of these rodents are the nocturnal carnivorous animals such as owls, foxes and coyotes. It is improbable that

"An adult pack rat seldom emits any vocal sounds during his lifetime." Photograph by the author.

hawks have much opportunity to capture them in the daytime. A food habits analysis of coyote stomachs from all over the country revealed that four per cent contained pack rat remains. The large owls are probably their most formidable enemies.

Being rather solitary animals, pack rats are not closely associated with other mammals. Around old buildings in the mountains red squirrels and white-footed mice often have nests established nearby without apparent conflict with pack rats. I have found pack rats living in close association with the little rabbit-like conies in the talus slides, but I do not know if there is competition between them.

Though pack rats' feet do not appear to be particularly adapted for climbing, they are capable of scurrying up trees almost with the speed



and agility of frisky red squirrels. Unaware of this I innocently assumed that I could easily recapture a large adult that escaped from me one day, and started up a tall yellow pine tree. With difficulty I pursued the elusive fellow to the very top of the tree where I thought surely I had cornered him at last. But at this point he merely leaped from the branch above me to one several feet below, and scampered down to the ground.

In captivity pack rats make interesting pets. Their inquisitive nature keeps them constantly active investigating anything that is new to them. In cages they maintain orderly nests, designating a definite corner for excretion, and a particular place for food storage. However, they never seem to lose their innate nervousness even after long periods in captivity, and hence rarely make calm and ideal pets.

Apparently it is unwise to keep a male and female in the same cage. When it is not mating season they will fight bitterly with each other, and even during mating periods there is often antagonism between the two sexes. Males are very choosy about mates, and will remain peacefully in a cage only with certain females.

The first mating takes place in early spring. After a gestation period of about six weeks an average litter of three or four young are born. At birth they appear quite like other rodents, being pink and almost hairless, and having both their eyes and ears closed. Within two or three weeks their eyes open and they acquire a juvenile pelage which resembles that of the adults, but is grayer and thinner. At the age

of two months they are gradually weaned. In some of the smooth-tailed species a second litter is born at this time. The bushy-tailed pack rats usually have only one litter a year.

Often when the female is frightened from her nest the young cling tightly to her nipples, and bounce along over the ground as she runs to some safe retreat. When they are weaned the young become independent of their mother. Through the fall and winter they continue to mature, and are ready to raise families of their own in the spring. A pack rat's average life span probably does not exceed two or three years in its natural environment, but under ideal conditions in captivity it may live much longer.

The bushy-tailed pack rats of the western mountainous regions have several close relatives which inhabit diverse environments in North America. In the arid southwestern deserts, smooth-tailed species live among the cacti and sagebrush, building huge nests often five feet high. In the eastern states the Allegheny wood rat makes his home in limestone cliffs.

In some regions pack rats are so numerous that they are nuisances. Around Pocatello, Idaho, rodent control methods have been used to decrease their numbers in certain areas. Nevertheless, when you kindle a lonely campfire in the evening near the base of a huge gray talus slide, or in a deserted cabin high in the mountains, or even among the cacti and sagebrush of the deserts, you will find these little "furry traders" are welcome and interesting companions at your fireside.

* * *

Conservation is a way of living and an attitude that humanity must adopt if it wants to live decently and permanently on earth.—Paul B. Sears, "Conservation, Please!"



Photograph by George Komorowski

KNOW YOUR BINOCULARS

By Robert J. and Elsa Reichert

ON ANY field trip you see birders using many different kinds of bird glasses, and sometimes you are surprised to find that the most expensive glass is not the one you prefer. Probably it is not the type that is best *for you*; or perhaps it is merely no longer functioning properly. To see the birds clearly—and that's why you're out birding—you need a glass that suits you personally, and is in good condition.

ABOUT THE AUTHORS

Robert J. Reichert and Elsa Reichert have been operating as the Mirakel Optical & Repair Company since it was established in 1923.

They were binocular importers for about 15 years, have visited most of the foreign binocular factories, and are manufacturers of binoculars of their own design. Besides making the mechanical parts for their own

MAGNIFICATION (Power)

Your binocular should "bring the birds up close," and show clearly details of markings and color. How close? A 6x glass magnifies 6 times: it makes a bird at 600 feet seem only 100 feet away; and one at 60 feet seem only 10 feet. An 8x glass brings them closer, and a 10x nearer still; but the bird may appear less clear. Any vibration of your hand holding the binocular is magnified as much as the bird. If this vibration is magnified too much, the

binoculars, they have computed the optical system and manufactured the lenses for them. The production of this binocular was interrupted by the war and has not yet been resumed.

For 25 years they have repaired all makes and types of binoculars. All models reaching this country have at some time or other passed through their hands. Mr. Robert J. Reichert is listed in "Who Knows—And What" under the classification of binoculars.

bird will seem to "jump around" to such an extent that it will appear blurred and cause eyestrain. Some experienced ornithologists use a 6x or 7x glass for general birding, and a 10x or more for special work; but it requires very steady hands to use such high magnification (high power) glasses successfully. Usually 6x or 7x, or at the most 8x, is recommended for restful vision.

For some purposes a low power field glass is adequate. The term "field glass" should be applied to a glass without prisms, and the word "binocular" to the prismatic type. Field glasses come only in low magnification, usually not over 4x or 5x. This is sufficient for very short distance observation, such as birds near the house; for longer distances you require 6x or 7x to show details you want to see.

LIGHT TRANSMISSION: EXIT PUPIL

To distinguish colors and fine markings, even when the day is dark or the bird is in shadow, you also need good light transmission. You want a glass that lets through a good deal of light. Some glasses let through much more than others. Light enters the binocular through the objective lens—the "window" of the binocular—and naturally a large objective lens lets in more light than a small one. The size of the objective (its diameter) expressed in millimeters (mm.) is the second numeral used to describe a binocular. A 7x35 has a 35-mm. objective; a 7x50 has a 50-mm. objective, which being much larger, therefore lets in a great deal more light. You can check the light transmission of a binocular quite easily: hold the binocular 8 to 10 inches from your eyes, pointed towards the sky, and look at

one of the ocular lenses. In the center you will see a circle of bright light—the cross-section of the beam of light coming out of the binocular. This circle of bright light is called the "exit pupil," and its area is a measure of the light transmission.

Comparing two binoculars with the *same magnification* (7x35 and 7x50), the one with the *larger objective* (7x50) has the larger exit pupil, and therefore greater light transmission. Comparing two binoculars with the *same size objective*, but different magnification (6x30 and 8x30), the *lower power* glass has the larger exit pupil, and therefore greater light transmission, which is another reason for using low power binoculars.

Unfortunately some binoculars are dishonestly built. The objective lens may be large, but behind it is a dia-



phragm that cuts down the size of the opening, much the way pulling down a shade cuts down the light coming through a window. However, you can easily detect this in any binocular: compare its exit pupil with the exit pupil in another binocular of the same type (same magnification and same size objective), which you know is honestly marked.

COATING

Before the war the size of the exit pupil was all you needed to know about the light transmission of a binocular. Today there is another factor: its brightness. After the light enters the objective, it passes through various lenses and prisms, and a good deal is "lost" by reflection from the surfaces of these glass parts. At each surface the loss is about 5 per cent, and as there are at least 10 such surfaces (on each side of a binocular), the total loss is considerable.

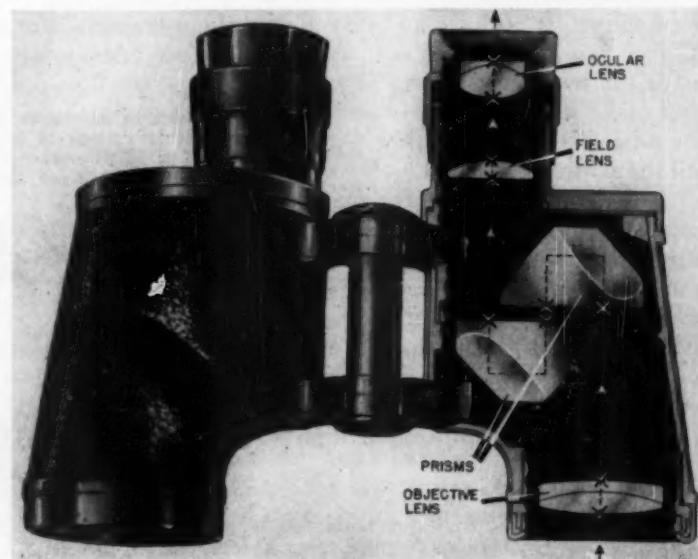
Science has now found a way to prevent so great a loss by means of a

new process called **COATING** (or **HARD-COATING**). The glass surfaces are treated to reduce the reflection of light to only about $\frac{1}{2}$ per cent (instead of 5 per cent) per surface. Much more light gets through the binocular—about 50 per cent more if all the required surfaces are coated. Of course, this increased brightness is of greatest value to you on dark days, or when the bird is in the shadow; then greater brightness means seeing colors and markings clearly instead of only dimly.

Strange as it seems, coating helps, not merely when the bird is in poor light, but when it is in brilliant light as well, but for a different reason. When the bird is in bright light, or silhouetted against a bright sky, the multiple reflections inside an uncoated binocular cause a glare that tends to blur vision. You've seen such blurring of vision in a store window when sunlight reflected from the window makes it impossible to see clearly the display behind the window. Much the same

←
Field glass (left). Each side has two lenses but no prisms. "X's" mark the four light-reflecting optical surfaces that can be coated.

→
Prism binocular (right), standard field. Each side has a two-lens ocular system, an objective lens and two prisms. "X's" mark the 10 optical surfaces where undesirable reflections occur. It is these surfaces that are coated to reduce reflection. A wide field binocular has an additional lens in the ocular system, making a total of 12 surfaces to be coated.



thing happens in a binocular, except that instead of two reflecting surfaces you have many more—at least 10. Coating these surfaces, because it reduces the reflections until they are negligible, enables you to see birds clearly, even when looking in the direction of, but not into, the sun.

So greatly does coating increase the clarity of vision of a binocular—both in dim and in very bright light—that all modern high-grade binoculars come with coated optics. Some of the less expensive glasses that call themselves "coated" have only a few—not all—of the surfaces processed, but even this is a help. How can you tell whether a binocular has coated optics? Look at the objective lenses: if they have a bluish or purplish tinge, they are coated. If you have any doubt, compare them with uncoated lenses; their appearance is quite different. However, this only tells you that the objectives are coated; you have no way of knowing how many of the inner surfaces of the binocular are coated.

Fortunately, you need not buy a new binocular to have a coated glass. If you own an uncoated one, you can have the lenses and prisms processed; but make sure the work is performed by an outfit that you know will coat *all* the required surfaces.

It is well to remark here that field glasses (non-prismatic glasses) are not much improved by coating. They have only four surfaces (on each side), instead of 10, so that not very much light is lost by reflection. Furthermore, the objectives are usually large enough and the magnification low, so that the light transmission is high.

FIELD OF VIEW

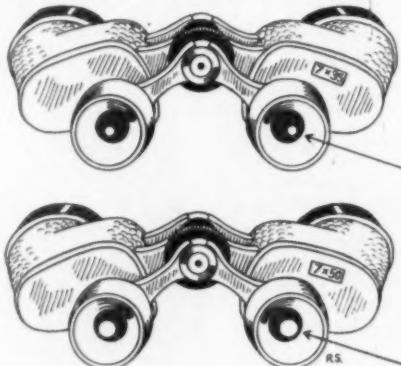
When watching birds, a wide field is a help. Field of view is the width

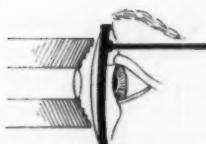
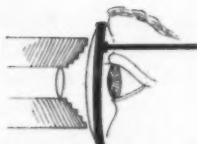
of scene visible through a binocular. Width of field is usually measured at a standard distance from the observer—1,000 yards away. The width of the field is usually quoted in feet.

Field of view depends partly on magnification: Comparing two binoculars of the *same design* and different magnification, the glass with the *lower magnification* has the *wider field of view*. A standard field 8x has a field of about 330 feet, and a standard field 6x a field of 445 feet. There are 8x binoculars with a 445-foot field; these are *wide field* glasses and differently designed. The part of a binocular that determines whether it is a standard field or wide field instrument is the ocular system—especially the field lens. In a standard field binocular, the ocular system consists of only two lenses, one of them a *small field* lens. In a wide field binocular, the ocular system is complex, consisting of three lenses, one of them a *large field* lens. This complex design is costly to make, and that is why true wide field binoculars are usually high-priced.

We say "true" wide field, because there is much false advertising on this subject. Most low-price binoculars are

The bright circle in the center of each ocular lens (below) is the "exit pupil." In the 7 x 50 binocular (lower), the exit pupil is much larger than in the 7 x 35.





Normal binocular eyecap used with eyeglasses (left) holds eye too far from the ocular lens for maximum field of view. Shallow cap (right) brings the user's eye to proper distance from lens, and full field of view can be seen.

called "wide field," although the field is only standard. How can you tell whether a binocular has a wide field? One way is to get this specification when you buy a glass—the number of feet seen at 1,000 yards—and compare it with the figures shown in the table. Another is to compare the binocular with a glass of the same magnification and known field of view. Look at something that is easily measured, such as a distant building with many windows, and count how many windows you see through each glass.

You may come across an untrue claim about field of view often found in ads. As above explained, the width of the field is determined by the size of the *field lens*. The *objective lens* has no effect whatever on field of view, and any claim that a large objective produces wide field is wholly false. A large objective, as previously mentioned, lets a great deal of light into the binocular, and that is its only advantage.

FIELD OF VIEW AND EYEGLASSES

If you wear eyeglasses you have a special problem as regards field of view. Binoculars are designed for use *without* eyeglasses. When you hold the binocular so that the eyecaps are close to your eyes, as is normally done when no eyeglasses are worn, you get the maximum field obtainable with that

particular binocular. If, however, you hold it so that the eyecaps are further from your eyes, as happens when you wear eyeglasses, then you get an appreciably smaller field of view. It is not practical to take off your eyeglasses every time you use your binocular; there is a better solution. Eyecaps are usually deep so that the ocular lenses are about 11 mm. from your eyes when you use the binocular without eyeglasses. They can be made shallow (flat), so that when you use the binocular with eyeglasses, the ocular lenses are close up against your eyeglasses—and about the correct distance from your eyes for maximum field of view. The increase in field thus obtained is quite surprising.

CHOICE OF MODELS

It is in the matter of field of view that a field glass is notably less satisfactory than a prism binocular. Although the magnification is only 4x or 5x, the field is considerably less than in a 6x binocular. That is why, apart from reasons of economy, the field glass is seldom chosen except for work at very close distances. It is somewhat easier to use than a binocular, and for that reason as well as its lower cost, it is particularly suitable for children.

When selecting a binocular, bear in mind that there is no binocular made, irrespective of price, that is ideal for all purposes. So you must decide what features are most important to you. If you are going to watch birds mostly under very dark conditions, such as at dawn or dusk or in deep shadow, then you need the 7x50 with its very large objectives—of course, with coated lenses and prisms. Its tremendous light transmission makes this model a must for work under such ex-

tremely unfavorable light conditions. To be sure, this glass is large and bulky—large objectives mean large prisms and large overall size. If smallness and compactness mean more to you than brightness, then you may pick a pocket binocular, which necessarily has small objectives. You may compromise on a 6x, 7x or perhaps an 8x binocular, with objectives not less than 30 mm. No matter what model you decide on, you naturally prefer it to have coated optics.

As for field of view, the standard field 6x has all the field you need for bird study; the 7x, of course, has somewhat less. A disadvantage of standard

field in 8x and 9x binoculars is their small field. If you want such magnification, you will undoubtedly choose wide field models, if you can afford them. Before deciding on any binocular, it pays to try it out on a birding trip, and if possible compare it with other glasses, to make sure it really suits your personal needs.

[EDITORS' NOTE: *The type of mechanical construction that is best for birding; how to use your binocular so as to get the best service from it; and how to tell whether it is in good condition and how to keep it that way—will be discussed in the next issue.*]

NATURE IN THE NEWS—Continued from Page 23

policy of the Federal Government not to purchase lands for an intended park site. But one would think that the State of New Jersey would see the advantage—on a straight dollars-and-cents basis—of purchasing an area that would inevitably become a magnet for tourists. Or some forward-looking corporation might make a magnificent gesture to the public by contributing the necessary funds. In any case, if the money is not somehow

found, it is the people of the United States who will be the losers. And the tragedy is that when they wake up to that fact it will be too late—for Island Beach as we know it will be gone.

(Editors' Note: *For the story of Island Beach in text and color, see "Forgotten Beach," by Richard Thruelson, November 18, 1950 issue of The Saturday Evening Post.*)

Reprinted from the NEW YORK HERALD TRIBUNE, Tuesday, November 14, 1950.

Audubon Find: 7 Paintings in Australia Home

Work Sold by "Len Audubon," a Great-Grandson, To Be Sent Here for Exhibit

By John O'Reilly

The discovery of six oil paintings and one watercolor of birds and mammals by John James Audubon, now in the possession of an Australian industrialist, was announced yesterday by E. Thomas Gilliard, ornithologist of the American Museum of Natural History, at the forty-sixth annual convention of the National Audubon Society being held at the organization's headquarters at 1000 Fifth

Avenue. Mr. Gilliard also informed the surprised and pleased members that the paintings will be loaned to the Society and exhibited here during the Audubon centennial week Jan. 21-27.

Mr. Gilliard told the meeting that last summer he was in Sydney, Australia, and was about to leave on a bird-collecting trip to New Guinea. The night before he left he was visiting E. J. L. Hallstrom, manufacturer of refrigerators and chairman of the Taronga Zoological Society in Sydney.

During their talk Mr. Hallstrom showed him a couple of books which he said a man by the name of "Len Audubon" wanted to

Continued on Page 56

MYTH - INFORMATION

By Lewis Wayne Walker

(Many wildlife myths and legends, built up by our early settlers around certain kinds of American birds and other animals, persist from generation to generation. In the second of a series, a writer-naturalist tells the true story underlying some pet beliefs.—The Editors)

Number 2 in a series

SIZE OF THE WOLF PACK

I have yet to read a fictionized story with a setting in the Far North without the mention of incredibly large packs of wolves. These animals usually "circle a campfire on noiseless treads" and the "eerie light from their eyes" practically petrifies their victims into helpless immobility. My own personal experiences with wolves have been rather slim and, aside from having one as a pet for about a year, my version of the actions of truly wild ones is hearsay from men who really know the North. Charles Brower, who resided for 50 years at Point Barrow, Alaska, has told me that the closest thing to a pack he had ever seen were two adults and a litter of half grown

cubs. Stefansson, surely not a novice when it comes to wolves, is of the opinion that packs are limited to family groups which break up when the pups are old enough to be on their own. Although wolves do not travel in the incredibly large packs of some outdoor fiction writers, E. W. Nelson, a former chief of the U. S. Biological Survey, reported wolf packs in 1880 that ranged from small packs of six up to as many as several dozens of animals. Adolph Murie in "The Wolves of Mount McKinley," based on his excellent studies in Alaska, found that wolf packs usually consist of one or sometimes two or more family groups.

Many of the oldtime illustrators pictured the wolf pack as a ferocious unit composed of hundreds of snarling beasts. Drawing by George Dineen.



MENABONI'

By Sara Menaboni

SOME women like to collect diamonds, others get increasingly expensive antiques; and some men want a string of horses, or fluorescent stones—all of us yearn to possess what we have set our hearts on getting. Sometimes collecting is only a passing fancy, but with Athos, from early childhood, his interest has been in the acquiring of birds and more birds. Since I have learned the joys of collecting, I have had an insatiable desire to add to my bird list. It will never be as long as my husband's, but he devotes himself to helping me, and we appreciate the fact that we have this interest together.

To read of birds I have not yet encountered drives me into a frenzy of desire to see them. Today I have been reading a book, sent to us by a friend made through correspondence, about South African birds. I am filled with frustration because I am not this minute packing and scurrying to get on the next ship that sails to South Africa. On the other hand, the man in Johannesburg wishes that he could see the birds that are my everyday companions. We cannot be everywhere and doing everything at once; therefore, I calm myself and decide that I am grateful for what I have right here.

The last bird added to my list was a blue-winged warbler, and the one before that was a yellow-throated vireo. I wonder how many people

know these two birds? They are not common sights for Athos and me, yet are ordinary perhaps to bird students in other parts of the country. I know that within our continental limits are dozens of species still to be seen by me. For that matter, around my own Atlanta, I have not met up with a prothonotary warbler, over which one local bird lady, when reporting a field trip, exclaimed, "We saw a prothonotary warbler who thrilled us all spring—and summer too!"

An ornithologist from Philadelphia came to Atlanta last year for his first visit and, with us, saw his first summer tanager. It was a common bird to us, but made him say in ecstasy, "Now I have lived!" Was he content with "living" in the past tense? There is no satisfying an ardent bird student, as a stamp collector is never content with what he has; there was still an hour before dark, and that man eagerly searched for his next new bird. Happily he added to his list a pileated woodpecker.

Collecting new names on our bird list is not the prime interest of Athos and me; we want to familiarize ourselves with the characteristics of each new species and its natural habitat. Indeed, this is of utmost importance to a naturalist-artist; Athos must know each subject intimately before he can paint its portrait. There is no way to learn about birds at first hand except to go search for them.

* From Chapter Five of "MENABONI'S BIRDS," by Athos and Sara Menaboni, published November 1950 by Rinehart & Co., Inc., New York, N. Y.

S B I R D S*

Athos and Sara Menaboni examine the abandoned nest
of a wood thrush. Photograph courtesy Gabriel Benzur.



When first I set out upon the new adventure with Athos, we found that our friends took a sudden interest in the quest for birds. Had we not had a definite purpose in going on jaunts, we should never have bothered to seek out the fields, swamps, hills, and valleys, and would never have seen all the scenic beauties that lay outside the city limits.

Our equipment for collecting was nothing more than field glasses and a field guidebook on birds, should we chance upon unknown species. We knew we should dress in comfortable hiking clothes of somber colors, the older the better. We went with only a couple of companions each time, for a large group frightens birds, and we had to talk softly and walk casually. We allowed ourselves hours for each field trip, for birds cannot be seen in a hurry.

From personal experience and observation, I believe there are no happier persons than those who are intent upon collecting nature data. And each person should make a beginning of his collection in his own "back yard." Of course, he may branch out, go further afield, perhaps decide to specialize in one subject, but the more he learns the more he knows lies in wait for him in his original back yard. After we moved to the country, we learned that we did not have to drive miles away to see the birds. Under a woodpile was our very own Carolina wren nesting; a brown-headed nut-hatch had a nest in a stump hole; a red-eyed vireo had her nest in a dogwood; a crested flycatcher came often to perch on a limb at our back door; there was a redstart in our woods—and every discovery added to our pleasure as well as knowledge. Now, when I am in the city, I have a deeper appreciation for the birds that are

right there for the persons who place a high value upon them.

The preceding summer I was summoned to a city apartment to get a young sparrow hawk that a lady had found upon her window sill. She liked him well enough for his appearance, giving him the name of "Joseph-with-the-coat-of-many-colors," and she did not object to solving the problems of feeding him, but she knew that he should not be kept in a cage that would prevent him from growing into a healthy adult; so she had telephoned us to come get him to raise. I told her of the joys of having a sparrow hawk, and asked why she did not herself wish to keep him free in her apartment until he was old enough to be liberated? Oh, no, Joseph was not housebroken and would streak her furniture and draperies with droppings. I brought Joseph to my own house, where he could leave his "calling cards" all over my furniture, draperies, and rugs! Furnishings could be cleaned or replaced, but nothing could ever replace the fun and additional bird data we got from Joseph until we released him.

The last estimated population of Atlanta was 330,000 people, but I daresay only a fraction of that figure knows certain of our birds—for instance, the phoebe, red-bellied wood-pecker, brown creeper, black and white warbler, broad-winged hawk, purple finch. Perhaps they do not know that hermit and gray-cheeked thrushes even exist; have missed the joys of seeing the diminutive golden-crowned and ruby-crowned kinglets; and have they seen a killdeer, woodcock, Wilson's snipe, and wood peewee? Few know the difference between a wood thrush and a brown thrasher, as I once did not, even though these occur in great numbers

here. In giving bird talks to over a hundred organizations in Atlanta to date, I have found that my audiences look blank when I mention the majority of the above-mentioned birds. "Gold is where you find it," and these people have not looked for it. I know that first I must collect my own native birds, appreciate them, and gain a background of knowledge about birds

in general before I trek off to South Africa to see the "blue crane, red-billed hornbill, crowned guineafowl, white-fronted bee eater," and all those other birds which seem so glamorous in the book I studied today. It behooves me to see my first prothonotary warbler right here! In books on American birds, he sounds as glamorous as a South African one. I recall

**The Menabonis at the entrance to their Georgia home,
Valle Ombrosa. Photograph courtesy Gabriel Benzur.**



a time when I wondered what made farmer folk seek glamour in the little Georgia town of Cave Springs, the inhabitants of Cave Springs come to my town of Rome, Romans go to Atlanta, Atlantans go to New York, New Yorkers go to Europe. Where on earth did the Europeans go? I found out later that Europeans wanted to go to New York. After they got there, they wanted to come to Atlanta, and when in Atlanta they wanted to move out to a country farm! At least, this is what happened to Athos from Europe, and to me too. I found later that Emerson had nicely summed it up: "Traveling is a fool's paradise. We owe to our first journeys the discovery that place is nothing. At home I dream that at Naples, at Rome, I can be intoxicated with beauty and lose my

sadness. I pack my trunk, embrace my friends, embark on the sea and at last wake up in Naples, and there beside me is the stern Fact, the sad self, unrelenting, identical, that I had fled from."

It so happens that Athos and I are lucky people, able to do exactly what pleases us most. It pleases us to stay right here now, preparing this book to share our personal birds with all who wish them. And who knows, the friend in South Africa may enjoy our birds as much as we have enjoyed his native birds; our book shall do the traveling, as other books have traveled to us from far places. We can't distribute a collection of diamonds, antiques, horses, or fluorescent stones, but anyone who wants them can have our birds!

NATURE IN THE NEWS

Continued from Page 50

sell. When Mr. Gilliard saw that the books were inscribed by John Gould, European bird painter, to John James Audubon, he advised Mr. Hallstrom to buy them. Then he suggested that Mr. Hallstrom investigate the home of "Len Audubon" to see if there were any paintings there.

Four months later Mr. Gilliard returned to Sydney and was again visiting Mr. Hallstrom. The latter opened a big safe in his apartment and first drew out eighteen Audubon elephant folio prints. Then he pulled out the paintings. The four bird paintings were of the orchard oriole, the yellow warbler, the Arctic three-toed woodpecker and the sharp-tailed sparrow. The animals were a yellow weasel, a white bull, stoats and two jack rabbits. All were oils except the jack rabbits, which were done in watercolors.

Great-Grandson

It then developed that the "Len Audubon" in whose home the pictures were found was Leonard Benjamin Audubon, the great-grandson of the famous painter. Chroniclers of Audubon history apparently had lost track of Leonard Benjamin Audubon. In his book, "Audubon the Naturalist," published in 1937, Francis Hobart Herrick explained that William Bakewell Audubon (1847-1932), a grandson of Audubon, went to Australia where he engaged in sheep raising and had two children, Leonard B. and Eleanor Caroline Audubon. He points out that Leonard B. Audubon was born in 1888 and fought with the Australian Army in World War I. He adds that "if still living he is the sole male representative of the American branch of the Audubon family."

John James Audubon, who died in 1851, repainted in oil a number of his famous wa-

Continued on Page 59

• • •

Audubon and his work were one; he lived in his work and his work will live forever.—Elliott Coues, "Key to North American Birds," 1884.

NEWS OF WILDLIFE AND CONSERVATION

By John H. Baker
President of the National Audubon Society



Photograph by Acme.

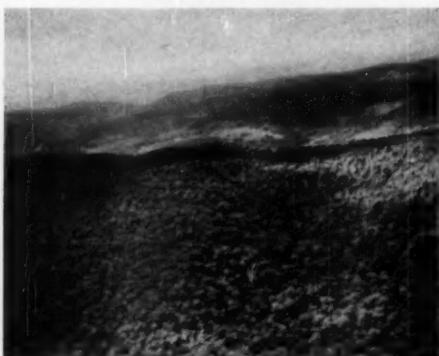
War and Wildlife

HERE we go again—or do we? At this writing it is hard to tell whether the war in Korea is to be extended. Come what may, our people will not wish to revert to the state of unpreparedness of pre-Korea days. In any event, for some time, pressures will increase to invade national parks, monuments, wildlife refuges and wilderness areas for defense purposes. Many of us remember all too well the character of such pressures that developed in 1941 and 1942. There is serious question whether our natural resources could stand the drain of another long world war—at least without leaving us in greatly impoverished condition. The Army and Navy will want large additional areas of land for maneuvers, artillery practice, and strafing and bombing targets for pilots in training. It will be claimed that we cannot produce enough meat without putting more cattle and sheep into the national parks. If the war develops, we shall doubtless witness, as we did in 1943, pressure from those who wish a continuing supply of sporting ammunition to harvest the meat of game birds and other animals. There will be no lack of per-

sons attempting to gain support for their projects in the name of defense, whether with any justification or not. As was said in a discussion meeting on this subject in 1941, "There is a lot of skulduggery and hysteria going on in the name of national defense."

It seems to us of vital importance that our federal government give due recognition to this situation by making it the full-time job of one or more carefully selected individuals, presumably identified with the Department of the Interior, to maintain liaison with other governmental agencies, particularly the Army and Navy, so as to be aware, in the planning stage, of what those other agencies believe their defense needs will be, and so be in a position to minimize undermining of our conservation policies by unnecessary encroachment. Often it is possible to satisfy the defense needs just as well in an area possessing relatively small scenic, recreational, educational, scientific or wildlife values as in one where those values are concentrated. Naturally, the Army and Navy are going to move largely in secret, but there is no reason why properly authorized officials of the Department of Interior could not maintain confidential liaison with effective results. In the early stages of the last war this was done on a part-time basis by a representative

Photograph by Acme.



of the Fish and Wildlife Service. Your Society has ventured to submit such a recommendation to the Secretary of the Interior.

Conservation Education in Washington

to practice conservation of natural resources.

Recognizing the significance of this situation, the Cathedral Chapter at its first 1950 meeting adopted this excellent resolution on conservation:

"WHEREAS: The Chapter of Washington Cathedral is mindful of the fact that the cause of conserving the nation's natural resources should be of serious concern to the churches and schools of the land, it hereby declares:

"1. That it affirms its own belief in the importance of this cause, first of all on religious grounds. 'The earth is the Lord's'; hence the conservation of God's gifts of creation is a duty laid upon Christian conscience.

"2. That, further, it desires to give expression to its concern for the cause of conservation by way of its own stewardship of the natural beauties of the Cathedral Close—by conserving our heritage of trees and soil, by wise channeling of the rainfall on our hillsides, and by offering sanctuary to the birds which nest in our forest reserve.

"3. That, further, it will enlist the Cathedral Schools in bringing to the attention of coming generations the vital

Photograph of Washington Cathedral tree planting ceremony by Del Ankers



importance of conserving the nation's natural resources by way of emphasis in classrooms, in science and in related subjects, and by way of supplementary lecture and field projects."

One of this Society's most active and generous members, Mr. James Sheldon of New York City, has taken a particular interest in the development of conservation activities at the Washington Cathedral. An essay contest on the subject "Conservation of Natural Resources" has been sponsored, and tree planting ceremonies have given the students at the Cathedral Schools a better comprehension of the meaning of conservation of forests, soil, water and wildlife.

The president of your Society has had the pleasure of speaking on the importance of conservation to the combined faculties of the three Cathedral Schools. The work being done there to make conservation a part of the philosophy of everyday living might well be emulated in many other schools.

Dams for Dinosaur

THE proposal of the Bureau of Reclamation to build dams in the Dinosaur National Monument in Utah and Colorado for irrigation furnishes an excellent illustration of unnecessary encroachment, although it has not, in so far as we are aware, been advanced on the grounds of national defense. A public hearing on this matter at which your Society was represented was held in Washington last spring. The Congressional delegations from Utah and Colorado were solidly behind the dam proposal. A representative of the Sierra Club, addressing the Secretary of the Interior, who was present, put the issue in a nutshell:

"Here you have a head-on collision between two national interests; that of economic development and that of preservation of the crown jewels, and you have to decide whether one of them is going to be put on the auction block."

The Secretary announced his decision in a letter to Senator Thomas of Utah and wrote in part: "Without intending by this action to establish a precedent for tampering with the inviolability of our national parks and monuments, I have approved the plan and called on the Bureau of Reclamation to draft necessary recommendations to the Congress for the building of Echo Park

and Split Mountain dams. I have, at the same time, asked the National Park Service to cooperate with its sister agency in working out the most feasible ways to insure appropriate recreational use . . . of the Dinosaur National Monument."

The national conservation organizations were unanimous in urging the Secretary not to approve of this project, there being other suitable locations where the same purpose might be served, although possibly at slightly greater cost in dollars. The issue now goes to the Congress, which would have to appropriate the money to finance the project. The conservation organizations are striving to convince the Congress that the money should not be appropriated until and unless the project has been revamped to take it outside the limits of the national monument.

NATURE IN THE NEWS

Continued from Page 56

tercolors for the portfolio of American birds. All but three of the original 455 watercolors are now at the New York Historical Society. A few of the oils are in private hands and some are in galleries. The Metropolitan Museum of Art has one and the American Museum of Natural History has three.

Works Authenticated

Mr. Gilliard checked the bird paintings found in Australia with the prints at the New York Historical Society and found them to be authentic. The discovery of three original paintings of mammals signed by Audubon is of special interest because relatively little attention has been given to the artist's interest in mammals. One painting was unsigned.

Mr. Gilliard has written a letter to the Australian asking him numerous questions about Leonard Benjamin Audubon and further details about the pictures. All of them were in good condition except for the painting of the yellow weasel. It had a number of small holes in it. Mr. Hallstrom explained that those holes were made by a small boy who, while playing Indian in the Audubon home, had put the picture on the wall and shot at it with a bow and arrow.

Mr. Gilliard and members of the Audubon Society are waiting eagerly for Mr. Hallstrom's letter.

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Audubon Guide To Bird Attracting

A department in which our readers can share with each other what they have learned about how to attract birds.

In this issue, some of our readers tell of their experiences in attracting birds.—The Editors

What to Feed Evening Grosbeaks?

Perhaps one of your readers would tell me what to feed evening grosbeaks that would be less expensive than sunflower seeds. I offer them bread crumbs, peanut butter (which is not cheap), cracked corn and wild bird seed, from which they only extract the sunflower seeds.

Not having bought a coat in 10 years I hoped to indulge myself this fall, but alas all my savings have gone into feeding the birds. However, it is a wonderful experience to have my flock of grosbeaks whistling me awake at dawn of a winter morning! They come fighting for space on my window sill and make an uproar until I open the casement window and fill with sunflower seeds the pieplate put there for this purpose. I have also tacked a shingle to the window sill, but still there is not space for all the birds that wish to alight.

ANITA M. SMITH

Woodstock, New York

Squirrel Protection Device

I read with interest the letter by Marion G. Allen of Rochester, New York on the subject of squirrels, which appeared in the September-October 1950 issue of *Audubon Magazine*.

During the spring and summer of 1950, we gained considerable experience in the protection of bird feeders from the piracy of these

little animals. We found that a sheet metal cone is very effective if it is "floppy" on the pole. The squirrels get quite disturbed when they climb up and try to hang on the edge and find themselves quickly deposited on the ground.

The illustration shows what the feeder looks like in our yard. The disc is about 30 inches



in diameter and has been so cut that, when it is drawn together and fastened with the brass staples and washers used to bind loose-leaf pages, it forms a shallow cone. The center hole is larger than the pipe to give the "floppy" effect. Blocks of wood or other means can be used to support the cone. We took small blocks of wood and bound them to the pipe with heavy cord.

This feeder is about 54 inches high and the cone was placed about two-thirds of the way up the supporting pole. This prevents squirrels from jumping over it.

It has been quite interesting to see the squir-

READERS!

(The editors of *Audubon Magazine* have planned to devote at least one issue each year of the magazine's bird-attracting department to letters from readers, and invite you to become one of our regular contributing guest columnists of this department. Your letters will be printed in order of their receipt here and their excellence of content. Please address them, with photographs and sketches illustrating your planting arrangements, bird feeders, birdbaths, etc., to *Audubon Magazine*, 1000 Fifth Avenue, New York 28, N. Y.)

rels maneuver for hours trying to negotiate this hazard. They climb up the rose arbor nearby and speculate on the risk of leaping to the tray. The distance is just too long for such a leap.

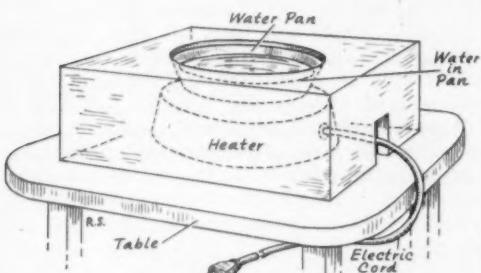
Mrs. J. D. Clute
Buffalo, New York

MRS. J. D. CLUTE

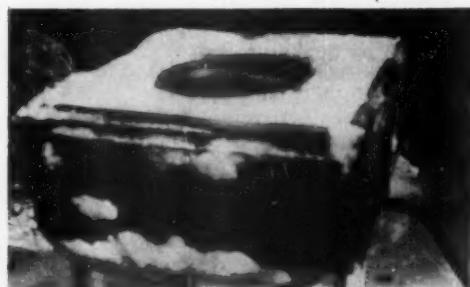
Heated Birdbath

Shown in the illustration is an electric heater with a thermostatically controlled unit that I use in my outside winter birdbath.

The diameter of the stainless steel dish is nine inches and its depth one and one half inches. The outside wood one-quarter inch plywood cover is 18 inches square and seven and one half inches high . . . closed on four sides with the dish firmly set into the wood of the top and open on the bottom to set over the wood enclosed heating unit which, from the illus-



Heater is ordinary poultry house unit.



tration, you will see is open only at the top. In other words, the bottom of the dish is always sitting on the metal top part of the heating unit . . . thus the water is kept from freezing by the contact of metal to metal.

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Book Notes

By John K. Terres

THE BIRDS OF ROCKY MOUNTAIN NATIONAL PARK

By Fred Mallery Packard, Rocky Mountain Nature Association, Estes Park Colorado, 1950. 5 1/4 x 8 1/2 in., paper-covered bulletin, 80 pp. Illus. by Roger Tory Peterson. Index and bibliography. 75 cents.

An excellent pocket-sized checklist, first published in the July 1945 issue of *The Auk*. The author, formerly with the National Parks Service and now with the National Parks Association, has prepared his booklet to aid both amateur and expert birders visiting Colorado's Rocky Mountain National Park. Several checklists of the birds occurring in the park have been published during the past 70 years, and all of the previous records have been included in the author's present list of 219 species.

CONSERVATION PLEASE! QUESTIONS AND ANSWERS ON CONSERVATION TOPICS

Conservation Committee of the Garden Club of America, New York, 1950, edited by Arthur H. Carhart. 7 1/4 x 9 3/4 in., paper-covered booklet, 127 pp. Indexed. \$1.00.

Prepared in cooperation with the American Museum of Natural History, New York City, this informative publication is the result of a question and answer program of the 1949 annual meeting of the Garden Club of America, Nashville, Tennessee. At this meeting, each of the 140 clubs that represent the Garden Club of America were asked to submit questions on conservation that they were most anxious to have answered by qualified authorities. As Richard H. Pough, Curator of Conservation, American Museum of Natural History, says in the foreword "... the 88 questions probably represent as good a cross-section of what the average informed layman would like to know about conservation as could be obtained anywhere."

The expert opinions in this booklet range from *What Conservation Means to Me* and *Conservation in the United States and Europe* to judgments on stream pollution, soil erosion, forest and wildlife management, conservation education, wilderness areas, insecticides, tree diseases, parks, soil conservation practices, rodent control and a host of other conservation problems. This booklet should be read by everyone seriously concerned with wildlife conservation, whether their interest is limited to one bird species or to the fauna and flora of our entire North American continent.

HANDBOOK OF ATTRACTING BIRDS

By Thomas P. McElroy, Jr., Alfred A. Knopf, New York, 1950. 6 1/4 x 8 1/4 in., 163 pp. Illus. with line drawings. \$2.75.

The author, curator of the Pequot-sepos Wildlife Sanctuary at Mystic, Connecticut, has written a fine, practical book on attracting birds that includes methods of artificial feeding, planting trees, shrubs and vines for birds, building birdhouses, attracting game species and waterfowl, care of young and injured birds, bird study, bird photography, bird-banding and a chapter on starting a public sanctuary. Anyone who attracts birds will want this useful, well-illustrated book.

TREES OF PENNSYLVANIA

By William C. Grimm, Stackpole and Heck, Inc., New York, 1950. 7 3/4 x 10 3/4 in., 363 pp. Illus. with line drawings. \$5.00.

For nearly a quarter of a century, since Dr. Joseph S. Illick's "Pennsylvania Trees" went out of print, there has been a need for an illustrated manual pertaining exclusively to the trees of this state. The present volume adequately fulfills this need and will be useful in identifying trees throughout the northeastern United States. The author, a graduate in botany and an experienced worker in nature education and wildlife research, treats 137 species of trees native to Pennsylvania and certain common introduced ones. The excellent illustrations of leaves, fruits, twigs and buds for each tree were made by the author. Simple keys based on summer and winter characteristics and a text for each tree, including descriptions, common names, uses and ranges, make this an unusually fine book of tree identification and tree lore.

TREES OF THE QUETICO-SUPERIOR COUNTRY

By J. E. Potzer, *The American Forestry Association, Washington, D.C., 1950. Illus. booklet, 38 pp. Free.*

In another of a series of booklets on the Quetico-Superior forest, the President's Committee continues its fine program of publishing on the wildlife of the wilderness region it has fought so hard to protect. A previous booklet, "Birds of Canadian Border States," was a narrative account of the birdlife of Quetico-Superior forest. This one includes line drawings of leaves, twigs, buds and fruits of trees found in Quetico-Superior forest which will aid in their identification. A history of the forest, including its plant succession, forest fires and their effect, and the environment in which certain species are found precedes the one-page identification text and drawings for each of 23 tree species.

MY CAMERA IN THE NATIONAL PARKS

By Ansel Adams, *Houghton Mifflin Company, Boston, Mass., 1950, also may be purchased from Virginia Adams, Yosemite National Park. 12½ x 14½ in., 97 pp. Bibliography of selected reading. \$10.00.*

Ansel Adams is one of America's most renowned landscape photographers. Trained as a musician, he decided as a young man to become a photographer, being influenced in his choice by trips into the vast wilderness of the Sierra Nevada. Since 1930, he has taught photography, written about it and taken photographs throughout the United States, Hawaii and Alaska. The 30 beautiful black and white photographs of scenes in National Parks and Monuments in this volume are the result of a Guggenheim Fellowship project. They are splendid examples of Adams' superb photographic technique and are magnificently reproduced.

SONG OF THE SEASONS

By Addison Webb, *William Morrow and Company, New York, 1950. 6½ x 8¾ in., 127 pp. Illus. with black and white drawings by Charles L. Ripper. \$2.50.*

A story of the seasons, how they change and how the changes affect animals, told simply and directly. The book begins with spring and its first signs and the mating and rearing of young by birds, mammals, fishes and amphibians. Summer, the season of learning, tells of young animals and their experiences; autumn, includes animal preparation for winter and the last section is an account of animal life in winter.

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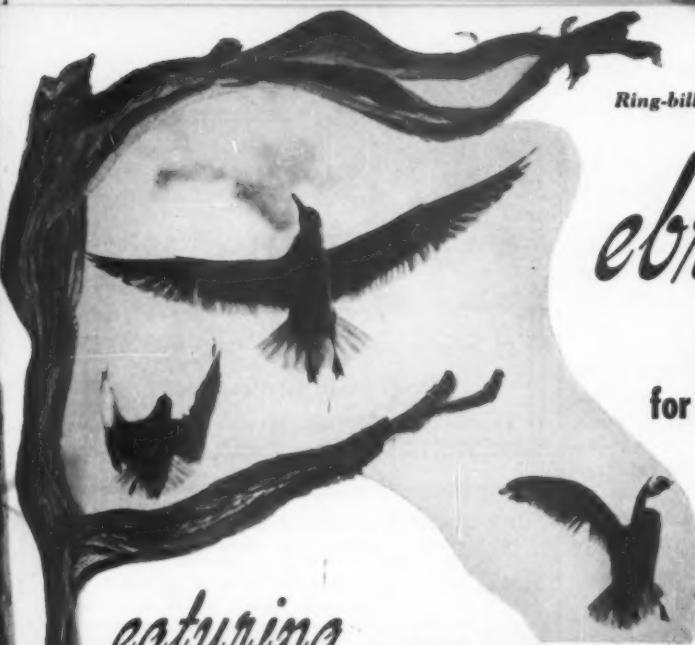
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ABOUT THE AUTHORS

GEORGE MIKSCH SUTTON (*Audubon, Pioneer American Bird Artist*) a Contributing Editor of *Audubon Magazine* for many years, has succeeded Dr. David E. Davis, of Johns Hopkins University, as Editor of the quarterly ornithological journal, *The Wilson Bulletin*. Though primarily a bird artist, Dr. Sutton is much interested in writing, especially in the accurate reporting of field observations. Active all his life as a field man he has this to say about his new editorial responsibility:

"I have been deeply interested in the Wilson Ornithological Club and its potentialities for years. I have come to believe in it, for when I attend its meetings I sense anew what our interest in birds can do for people. Birds are indeed the possession of all. Every person in America can be a bird student if he wishes to be, but we must have a system which preserves bird habitats and makes such wild areas available to even the poorest city dweller, if this talk about 'common ownership of birds' is to be more than fatuous prattle."

NELL B. ELDER (*Can the Nene Come Back?*) has lived in Honolulu since 1917. For about 25 years she has taught newswriting and has helped to organize three of Honolulu's schools—two high schools and one elementary school. Since retiring in 1942, she has been a free lance writer of which she says:

"Hawaii is full of fascinating subjects for the writer and I find that I make new friends every time I start researching on a new subject. I love the Islands and never expect to live anywhere else."

WILKINS W. WHEATLY (*American Animal Names*) became interested in natural history during his early boyhood in Colima, Mexico. There he had pet monkeys and parrots and learned about iguanas and other reptiles. Later, when his family moved to a ranch near Santa Cruz, California, he became acquainted with finches, quails, skunks and bobcats. Mr. Wheatly is a director of the San Diego (California) Audubon Society and has had articles and photographs published in the *Country Gentleman*, *Farm Journal*, *Nature Magazine*,

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zine, *Natural History* and other magazines. This is his first article for *Audubon Magazine*.

NORMAN C. NEGUS (*The Bushy-tailed Pack Rat-Furry Trader*) was born in Portland, Oregon 24 years ago and has been interested in wildlife as long as he can remember. His family moved to Ohio where with other boys he roamed the beech-maple woodlands in a competitive game to see who could identify the most birds. He served an apprenticeship in various departments of the Cleveland Museum of Natural History, particularly in ornithology and mammalogy. Both his bachelor's and master's degrees in zoology were received from Miami University, Oxford, Ohio. At present Mr. Negus is studying the migration of the Indiana bat, *Myotis sodalis*, and earning money to complete his work toward a Ph.D. in zoology.

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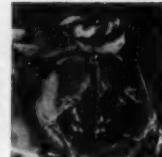
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(Page 45)

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